

Naval Audit Service



Audit Report



Fleet Gapped Critical Billets

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N2014-0022
20 May 2014

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Subj: FLEET GAPPED CRITICAL BILLETS (AUDIT REPORT N2014-0022)

Ref: (a) NAVAUDSVC memo 2012-049, dated 17 Aug 12
(b) SECNAV Instruction 7510.7F, "Department of the Navy Internal Audit"

1. The report provides results of the subject audit announced in reference (a). Section A of this report provides our findings and recommendations, summarized management responses, and our comments on the responses. Section B provides the status of the recommendations. The full text of management responses is included in the Appendix.

Command	Finding No.	Recommendation No.	Status
Commander, United States Fleet Forces Command	1	1	Open
Deputy Chief of Naval Operations (N1)	1-3	1-4 7-8	Open
		5, 6	Closed
Commander, Pacific Fleet	1	1	Open
Commander, Naval Surface Forces	1	1	Open
Bureau of Naval Personnel	2	2, 3	Open
		5	Closed
Naval Personnel Command	4	9	Closed

2. Actions taken by Deputy Chief of Naval Operations (N1), Bureau of Naval Personnel, and Naval Personnel Command meet the intent of Recommendations 5, 6, and 9, and the recommendations are closed. Actions planned by the Commander, United States Fleet Forces Command, Deputy Chief of Naval Operations (N1), Commander, Pacific Fleet, Commander, Naval Surface Forces, and Bureau of Naval Personnel meet the intent of Recommendations 1-4, 7, and 8. These recommendations are considered open pending completion of the planned corrective actions, and are subject to monitoring in accordance with reference (b). Management should provide a written status report on the recommendations within 30 days after target completion dates. Please provide all correspondence to the Principle Director for Internal Control and Investigative Support Audits, XXXXXXXXXXXXXXXXXXXXXXXXXXXX, with a copy to the Director, Policy and Oversight, XXXXXXXXXXXXXXXXXXXXXXXXXXXX. Please submit

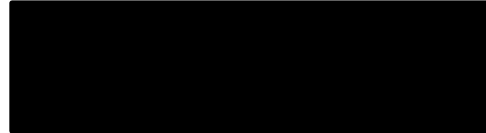
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3. Any requests for this report under the Freedom of Information Act must be approved by the Auditor General of the Navy as required by reference (b). This audit report is also subject to followup in accordance with reference (b).

4. We appreciate the cooperation and courtesies extended to our auditors.



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Executive Summary

Overview

The mission of the Navy is to maintain, train, and equip combat-ready Naval forces capable of winning wars, deterring aggression, and maintaining freedom of the seas. In Fiscal Years (FYs) 2011 and 2012, Naval Surface Forces, Atlantic identified gapped billets as a high-risk area. The concern was that Surface Force senior enlisted engineering (main propulsion) rating shortfalls and Fleet distribution makes it impossible to meet shipboard manning requirements. The term “gapped billet” is the difference between billets authorized and the current personnel onboard. According to Naval Surface Forces personnel, “critical gapped billets” differ based on class of ship and must be manned for mission readiness. Fleet gapped billets have had a significant impact on the Navy’s ability to fully implement their mission statement, as well as achieve mission readiness on surface ships across the fleet.

Naval Personnel Manual 15560D, “Naval Military Personnel Manual,” dated 22 August 2002, provides policy, rules, and practices for administration of military personnel within the Navy. Enlisted detailers are charged with the equitable distribution of Sailors to commands based on billets authorized and the Navy Manning Plan. A detailer’s primary consideration for selection of Sailors is based on the needs of the Navy, career needs of the individual, and desires of the individual. The needs of the Navy are the primary consideration.

The Navy has taken actions to reduce gapped sea billets, but gaps cannot be eliminated without increasing enlisted personnel and enlisted billets authorized, and without ensuring that rotation between sea and shore duty is correctly balanced. Current efforts by the Navy to correct the Surface Fleet gapped billets are making improvements but are not solving the problem. This audit focused on gapped mission-critical shipboard billets with emphasis on six sea-intensive Naval Surface Forces enlisted ratings. This included a review of 5 years of Fleet gapped billets Navy-wide for Surface ships (FYs 2008 through 2012). We conducted site visits to 7 Surface Ships, based on availability, out of 285 active ships. The purpose of our site visits was to determine the effect of gapped billets aboard surface ships overall. We conducted this audit between 17 August 2012 and 7 April 2014.

Reason for Audit

The audit objective was to verify that internal controls over mission critical shipboard billets ensured manning requirements were met and billets were not gapped.

This subject of this audit was identified as an area of concern in FYs 2011 and 2012 by Naval Surfaces Forces, Atlantic through U.S. Fleet Forces Command.

Noteworthy Accomplishments

During the audit, we found that approximately 99.7 percent of Sailors who received consecutive shore assignments in selected ratings were properly detailed to those assignments in accordance with the Naval Military Personnel Manual. This confirmed that the detailers were appropriately following the Naval Military Personnel Manual when assigning Sailors upon the completion of their shore duty assignment. We based our conclusion on our statistical analysis of back-to-back shore duty assignments for six sea-intensive ratings. Because detailers performed their duties as required, back-to-back shore duty assignments do not appear to contribute appreciably to critical gapped sea billets. Additional details are contained in Finding 5 of this report.

Conclusions

The Navy has not developed a comprehensive strategy to reduce its gapped billets aboard ships. Current initiatives are beginning to show reductions in the number of gapped billets; however, additional time is required to determine if they will successfully correct all of the systemic sea duty billet gaps. Additionally, without increasing enlisted personnel, recurring gaps will not be corrected.

We also found that the Navy inadvertently did not allow a sufficient number of Sailors in sea billets to re-enlist and removed too many Sailors as a result of Enlisted Retention Board actions. Additionally, Perform to Serve actions did not give enough priority to Navy Enlisted Classifications (NECs) when determining which Sailors to retain or separate, contrary to Navy guidance. Enlisted Community Managers who used the Spread Enlisted Programmed Authorization (EPA) model could not always explain how the EPA line on the model was calculated. Further, the Navy's sea/shore flow model may not always accurately calculate the correct tour lengths for Navy enlisted ratings to reduce the number of gapped billets at sea. We noted that a formal continuity of operations plan was not in place to cover operations if the current employee who solely operates the model becomes unavailable. We additionally found that the assignment of enlisted Sailors to training is extending shore duty tours beyond the required minimum of 36 months, which is contributing to critical gapped billets at sea.

These conditions occurred, in part, because:

- According to Deputy Chief of Naval Operations (N1) personnel, previous programming decisions reduced shore billets, which drove an imbalance in several enlisted ratings;
- The Spread EPA model does not consider enough factors to accurately predict the manpower needs of the Navy by year groups, uses invalid or inaccurate assumptions in its calculations, and does not properly adjust for different economic conditions;
- The Navy's sea/shore flow model contains invalid assumptions and does not allow for assignment of Sailors with the correct experience levels to be placed in the correct billets, when required; and
- The period of time designated for training was not included in the Sailors' shore rotation time period.

As a result, gapped billets continue to exist, Sailors may be required to work longer hours to make up for gapped billets, and junior Sailors may not receive needed supervision. Ultimately, the lack of sufficient numbers of experienced Sailors to fill critical sea billets may put the safety and readiness of Navy surface ships at risk, and adversely impact the Navy's ability to carry out its mission.

Communication with Management

Throughout the audit, we kept Navy leadership informed of the conditions noted. Specifically, we briefed the Assistant Secretary of the Navy (Manpower and Reserve Affairs) on 19 September 2012; Chief of Naval Personnel on 6 December 2013; Commander, Naval Surface Forces, Atlantic on 4 January 2013; Commander, Naval Surface Forces, Pacific on 23 January 2013; Office of the Chief of Naval Operations – Director, Military Personnel Plans and Policy, (N13) on 9 October 2012 and 22 March 2013; Deputy Chief of Naval Personnel/Commander, Navy Personnel Command on 21 August 2012, 18 April 2013 and 12 February 2014; Assistant Commander, Career Management (PERS-4) on 21 August 2012, 12 December 2012, and 18 April 2013; the Executive Director of U.S. Fleet Forces Command on 2 September 2012; and the Executive Officer of Navy Manpower Analysis Center on 22 August 2012. We also conducted site visits to seven Naval Surface Forces ships. During each site visit, we interviewed Commanding Officers, Executive Officers, and senior enlisted personnel to determine how gapped billets affected the mission onboard the ships and discussed our results to date.

Federal Managers' Financial Integrity Act

The Federal Managers' Financial Integrity Act (FMFIA) of 1982, as codified in Title 31, United States Code, requires each Federal agency head to annually certify the effectiveness of the agency's internal and accounting system controls. The recommendations in this report address issues related to the internal control over gapped billets. In our opinion, the weaknesses noted in this report may warrant reporting in the Auditor General's annual FMFIA memorandum identifying management control weaknesses to the Secretary of the Navy.

Corrective Actions

In Finding 1, we recommended that Deputy Chief of Naval Operations N1 (Manpower, Personnel, Training and Education); Commander U.S. Fleet Forces Command; Commander Pacific Fleet; Commander Naval Surface Forces; and Navy Personnel Command work together to study the possibility of establishing a standardized personnel augmentation procedure within Fleet Concentration Areas that could be exercised to support material readiness and training efforts for undermanned ships while in port.

In Finding 2, we recommended that both the Office of the Chief of Naval Operations (N13) – Military Personnel Plans and Policy, and Bureau of Naval Personnel:

- Revise and improve the Spread Enlisted Programmed Authorization model to adjust for high attrition years and low attrition years;
- Evaluate the use of a Simulation model. For more informed decisionmaking, consider adding additional variables such as current manning, monetary retention incentives, and economic conditions;
- Provide additional training to Community Managers regarding how to use the Spread Enlisted Programmed Authorization model and ensure they are using it appropriately to make effective manning decisions; and
- Revise the re-enlistment algorithm to place a higher priority on Navy enlisted classifications (NEC), by either categorizing by NECs, and then evaluating performance; or establishing a minimum performance level, ranking by NECs, and then ranking by performance when determining which Sailors will be retained or separated.

In Finding 3, we recommended that Office of Chief of Naval Operations (N1): (a) create a fit model rather than a fill model; (b) take action to determine the feasibility of developing or procuring a modeling and simulation model that will simulate real-world

processes; and (c) provide additional oversight over the sea/shore flow model to ensure appropriate separation of duties are in place and are working effectively.

In Finding 4, we recommended that Navy Personnel Command require Detailers to adhere to Naval Military Personnel Manual Article 1306-104 which will increase their authority to pull enlisted Sailors up to 6 months early from their shore duty tours to better meet Fleet Requirements.

The actions competed or planned by management meet the intent of the recommendations.

Actions taken by Deputy Chief of Naval Operations (N1), Bureau of Naval Personnel, and Naval Personnel Command meet the intent of Recommendations 5, 6, and 9, and the recommendations are closed. Actions planned by the Commander, United States Fleet Forces Command, Deputy Chief of Naval Operations (N1), Commander, Pacific Fleet, Commander, Naval Surface Forces, and Bureau of Naval Personnel meet the intent of Recommendations 1-4, 7, and 8. These recommendations are considered open pending completion of the planned corrective actions

Section A:

Findings, Recommendations, and Corrective Actions

Finding 1: Gapped Billets

Synopsis

The Navy has not developed a comprehensive strategy to reduce its gapped billets aboard ships. The Navy's Personnel Command Manual 15560D, "Navy Military Personnel Manual," dated 22 August 2002, provides policy, rules, and practices for assigning Naval enlisted personnel within the Navy's sea shore rotation. Current initiatives are beginning to show reductions in the number of gapped billets; however, additional time is required to determine if they will successfully correct all of the systemic sea duty billet gaps. Additionally, without increasing enlisted personnel, recurring gaps will not be corrected. For the 9 ratings audited, the Fleet reported 3,955 gapped billets.

According to Deputy Chief of Naval Operations (N1) personnel, previous programming decisions reduced shore billets which drove an imbalance of sea and shore billets. Other causes that contributed to gapped billets were the use of the Navy's sea/shore flow model (sea shore rotation), the management of community health (i.e., numbers and experience levels) for enlisted ratings, training assignments, and Perform to Serve (PTS) and Enlisted Retention Board actions. These causes are addressed in the subsequent findings of this report. While there is currently no specific criteria for developing a comprehensive strategy to address gapped billets, commands are working on solutions to address this issue.

We also identified high-level causes that further contributed to gapped billets, such as the Navy:

- Has reduced the number of enlisted personnel, but has not reduced the number of surface ships at the same rate;
- Underfunded the Training and Transient, Patients, Prisoners and Holdees accounts;
- Planned the decommissioning of 4 cruisers causing a loss of about 1,220 enlisted personnel, but the Navy is continuing to use and man the cruisers; and
- Ended Fiscal Year (FY) 2012 below enlisted end-strength, further contributing to the gaps at sea.

We looked at the billets for Commanding Officers, Executive Officers, and senior enlisted personnel aboard seven ships and determined that as a result of the gapped billets and some of the initiatives discussed above, the readiness of Surface Fleet ships may be reduced, Sailors may be required to work longer hours to make up for gapped billets, and junior Sailors may not receive needed supervision.

Because the high-level causes can only be addressed at the highest level within the Department of Defense, we did not provide recommendations to address them.

Discussion of Details

Background

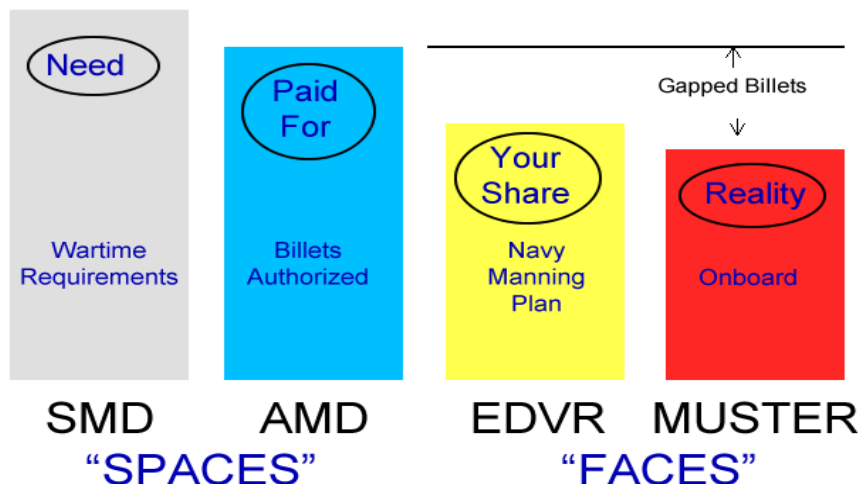
Shipboard requirements are developed by the Navy Manpower Analysis Center and are included in the Ship Manning Documents. These Ship Manning Documents are developed based on the Required Operational Capability, Projected Operational Environment, measured requirements, and required billets for each class of ship. The Ship Manning Document's manpower requirements are then entered into the Total Force Manpower Management System.

The Navy takes the requirements that have been entered into the Total Force Manpower Management System and determines how many billets it will fund. The funded billets are established as the billets authorized. The billets authorized are typically less than the minimum billet requirements established by the Navy Manpower Analysis Center because the Navy is not funded to total requirements.

The Navy also determines the number of Sailors rotating from between shore and sea duty within the current and the next fiscal year. The Navy's Personnel Command Manual 15560D, "Navy Military Personnel Manual," dated 22 August 2002, provides guidance for assigning Navy enlisted personnel within the Navy's sea shore rotation. Additionally, the Military Personnel Manual 1306-101, "Enlisted Assignment System," dated 5 November 2010, provides guidance on rotation patterns, also referred to as "sea/shore flow," throughout a career as a repetition of assignments at sea and ashore. The type of duty to which a Sailor will be reassigned is dependent on completion of the sea or shore tour as specified in this manual. From this information, the Navy Manning Plan is developed, which determines how the enlisted Sailors will be distributed. Current onboard¹ is the result of the Navy executing the Navy Manning Plan, as well as, the result of the enlisted Sailors being assigned to each command. The difference between the billets authorized and the "current onboard" are gapped billets. The following chart shows this process in graphical form.

¹ "Current onboard" is the number of people currently assigned to a Naval activity.

Figure 1- Number of Sailors Required or Planned Compared to Onboard Personnel Resulting in Gaps²



Pertinent Guidance

For additional background information and pertinent guidance, see Exhibits A and D.

Audit Results

The Navy has not developed a comprehensive strategy to reduce its gapped billets aboard ships. Current initiatives are beginning to show reductions in the number of gapped billets; however, additional time is required to determine if they will successfully correct all of the systemic sea duty billet gaps. Additionally, without increasing enlisted personnel, recurring gaps will not be corrected. For the 9 ratings audited, the Fleet reported 3,955 gapped billets out of 18,730 sea billets authorized.

According to N1 personnel, previous programming decisions reduced shore billets, which drove an imbalance of sea and shore billets. Other causes that contributed to gapped billets were the use of the Navy's sea/shore flow model (sea shore rotation), the management of community health for enlisted ratings, training assignments, and PTS and

² SMD –Ship Manpower Document displays approved quantitative and qualitative manpower requirements for an individual ship or class of ships and the rationale for determination of the requirements. It is the minimum number of positions a ship needs to meet its wartime requirements while at sea. AMD –Activity Manpower Document is the qualitative and quantitative expression of manpower requirements/authorizations for a Naval activity. It is the single official statement of organizational manning and billets authorized. EDVR – Enlisted Distribution Verification Report is a monthly statement of the activity's personnel account, reflecting all individual assignments. Muster is the report of onboard personnel present.

Enlisted Retention Board actions. These causes are addressed in the subsequent findings of this report.

We also identified high-level causes that further contributed to gapped billets such as the Navy:

- Has reduced the number of enlisted personnel, but has not reduced the number of surface ships at the same rate;
- Underfunded the Training and Transient, Patients, Prisoners and Holdees accounts;
- Planned the decommissioning of four cruisers causing a loss of about 1,220 enlisted personnel, but the Navy is continuing to use and man the cruisers; and
- Ended FY 2012 at below enlisted end-strength, further contributing to the gaps at sea.

Trends in Gapped Rates

The Navy has not developed a comprehensive strategy to reduce its gapped billets aboard ships. We audited 9 enlisted ratings that, according to the Fleet, had 3,955 gapped billets at sea. We found that without increasing enlisted personnel, recurring gaps will not be corrected. We obtained data from the Fleet Training Management and Planning System for Fiscal Years 2008 through 2011, and 2012 data from the Navy Personnel Command Web site, to determine trends in gapped rates within our scope. For the 9 ratings audited, trends showed that gapped billets have been a continuing problem for the Surface Forces for at least 5 years. Table 1 shows our trend analysis for the ratings we reviewed.

Table 1 - Trend Analysis That Shows Gapped Ratings

Gapped Enlisted Ratings	Navy Pay Grades Gapped By Fiscal Year ³				
	FY08	FY09	FY10	FY11	FY12
Aviation Boatswain's Mate Fuel (ABF)	E3, E7, E8	E8	E4	E4	E3, E8
Aviation Boatswain's Mate Handler (ABH)	E1-E8	E1-E3, E7, E8	E1-E3, E8	E1-E3, E8	E1-E3, E4, E8
Gunner's Mate (GM)	E1-E3, E5, E6, E8	E1-E3, E6-E8	E1-E3, E6-E8	E4-E8	E1-E3, E6, E7
Gas Turbine Systems Technician (GS)	E8	E8	E8	E8	E8, E9
Gas Turbine Systems Technician Electrical (GSE)	E5-E7	E4, E5, E7	E4	E7	E4
Gas Turbine Systems Technician Mechanical (GSM)	E4, E5	E4, E5	E4-E6	E4, E5	E1-E5
Operations Specialist (OS)	E4, E5	E4-E6, E9	E4-E6, E9	E4, E5, E9	E3-E5
Quartermaster (QM)	E3-E5	E3-E5	E7, E8	E7, E8	E3-E4, E6-E7
Sonar Technician (STG)	E1-E5	E1-E5, E8	E1-E3, E5, E8	E5, E8	E1-E5

U. S. Fleet Forces Command also provided us with the number of “fit” gapped billets⁴ for the ratings we audited. This provides a breakdown of gapped billets for supervisor, journeyman, and apprentice Sailors. Table 2 shows the number of “fit” gapped billets by enlisted rating as of March 2013.

³ We applied the “one up/one down rule” or the “pay grade substitution” practice for detailing to determine if a gap trend existed that could not have been filled within this criteria.

⁴ Supervisor billets are for E-7 to E-9. Journeyman billets are E-5 and E-6. Apprentice billets are E-1 to E-4. Some of the Apprentice gaps are being filled by Professional Apprenticeship Career Track (PACT) Sailors who have not yet been given a rating. PACT Sailors are not rated (do not have a rating such as gunner's mate, etc.), but the Navy has a "covenant" with the Sailor to be rated within 24 months onboard their first permanent duty station (PDS).

Table 2 – Number of Fit Gapped Billets for Enlisted Ratings⁵

Enlisted Ratings	Grade	Fit Gaps	Totals
Aviation Boatswain's Mate Fuel (ABF)	SUPERVISOR (E7-E9)	16	
	JOURNEYMAN (E5- E6)	36	
	APPRENTICE (E1-E4)	293	345
Aviation Boatswain's Mate Handler (ABH)	SUPERVISOR	20	
	JOURNEYMAN	25	
	APPRENTICE	850	895
Gunner's Mate (GM)	SUPERVISOR	67	
	JOURNEYMAN	217	
	APPRENTICE	216	500
Gas Turbine Systems Technician Electrical (GSE)	SUPERVISOR	18	
	JOURNEYMAN	56	
	APPRENTICE	130	204
Gas Turbine Systems Technician Mechanical (GSM)	SUPERVISOR	33	
	JOURNEYMAN	124	
	APPRENTICE	331	488
Gas Turbine System Technician (GS)	SUPERVISOR	26	26
Operations Specialist (OS)	SUPERVISOR	45	
	JOURNEYMAN	746	
	APPRENTICE	118	909
Quartermaster (QM)	SUPERVISOR	63	
	JOURNEYMAN	82	
	APPRENTICE	152	297
Sonar Technician (STG)	SUPERVISOR	16	
	JOURNEYMAN	135	
	APPRENTICE	140	291

Current Navy Initiatives to Reduce Critical Gapped Sea Billets

Navy leadership has initiated several actions in an attempt to resolve gapped billets. For example, leadership has: (1) developed community health models to help manage manpower levels (see Finding 2); (2) developed a sea/shore flow model to obtain optimal sea tour lengths (see Finding 3); (3) initiated Billet Realignment/Restoration and T+X Accession Programs; (4) improved methods of detailing Navy personnel; (5) issued several Navy Administrative Messages to improve at-sea manning; and (6) used various manning actions to reduce gapped billets on ships that are scheduled to deploy. Although the current initiatives are resulting in some reductions in the number of gapped billets, they do not appear to have corrected the recurring gaps.

⁵ Gapped totals shown in Tables 1 and 2 may not match due to the effects of grouping gaps and timing differences.

Prioritizing Billets. The Navy changed the way they assigned enlisted Sailors to ships to reduce the number of gapped billets at sea (detailing). Specifically, vacant billets aboard ships are now prioritized by the U. S. Fleet Forces Command (Fleet Manning Control Authority). The priority list is based on the deployment schedules of the Surface Forces. Using this list, the Navy Personnel Command only advertises the highest priority billets to Sailors rotating from shore duty to sea duty. The detailers at Navy Personnel Command then fill the high-priority billets first, before filling other billets. This process is reducing gapped billets onboard ships that are about to deploy. Unfortunately, it is not reducing the total number of gapped billets. Instead, it shifts the gaps from deploying ships to ships that have just returned from deployments, which still require full crews.

Naval Administrative (NAVADMIN) Messages. Over the past 2 years, the Navy introduced several voluntary and structural measures to improve at-sea manning. These included the Voluntary Sea Duty Program and Expanded Sea Duty Incentive Pay. The Navy also made sea/shore flow updates, added additional sea duty billets in future years, and increased accessions. While these actions gained traction, additional measures (discussed below) were necessary to reduce gaps in critical skills and supervisory manning onboard ships about to deploy.

In July 2012, the Chief of Naval Operations (N1) implemented changes to existing distribution policies, procedures, and systems to specifically address gaps. Those changes were to address gaps, which are currently filled on short notice with Sailors diverted or cross-decked from other units. A discussion of each is shown below.

NAVADMIN Message 226/12, “Changes in Enlisted Distribution to Improve Sea Duty Manning.” This message addressed changes to the Career Management System Interactive Detailing Process. The goal was to provide greater predictability in future manning and to reduce short-notice manning actions, including cross-decks and diverts. The change did not reduce the gaps on surface fleet ships, but instead shifted those gaps to units that were not close to deployment. This “just in time manning” practice means the deploying ships have priority for filling billets, but they do not receive the Sailors early enough for them to participate in the complete training workup. It also increases the number of gaps on ships that are not close to deployment.

NAVADMIN Message 230/12, “Chief Petty Officer Early Return to Sea.” This message puts new detailing business rules in place that address senior enlisted leaders (E7-E9). It is a long-term solution to reducing gapped billets. It is intended to remain in place as a means of maintaining the required level of critical senior enlisted leadership at sea. This Naval message helps to reduce gapped billets at sea for E7-E9 pay grades by detailing them from shore duty early (less than 36 months of shore duty) and returning them to sea duty. The change was

expected to return 180 Sailors to sea duty. However, as of 15 March 2013, this policy guidance had only returned 31 Sailors to sea.

NAVADMIN Message 227/12, “Limited Directed Detailing for Enlisted Sailors.” This message allows the reassignment of Sailors on shore duty who have critical skills required by the Navy’s imminent deployers to sea duty. Specifically, Sailors who have completed a minimum of 24 months on-shore duty at the time of order execution, may be contacted by their detailer and directed to a sea duty assignment prior to their projected rotation date. Due to funding, this was targeted as a 1-month effort in August 2012. It is a temporary fix that identified Sailors on shore duty that could be detailed (involuntarily) early back to sea duty before 36 months of shore duty. Each member sent to sea duty prior to 36 months of shore duty would receive a payment for each month of shore duty curtailed. This change was expected to return about 200 to 400 Sailors to sea. We determined that as of 15 March 2013, it had returned 141 to sea duty. In total, 194 Sailors were expected to return to sea in FY 2013.

NAVADMIN Message 229/12, “Voluntary Sea Duty Program Update Two.” As a result of this change, Sea Duty Incentive Pay was offered to address consistently gapped billets. It is a financial incentive pay program for members of specific enlisted communities who are willing to voluntarily extend their sea duty or curtail shore duty. This is an ongoing effort and considered a long-term solution to filling some of the gaps at sea. This change was expected to return 350 Sailors to sea. As of 15 March 2013, the total for the above NAVADMINS was 521 Sailors returned to sea duty, exceeding the total of 350 who were expected to return in FY 2013.

Table 3 provides a summarization of what the Navy was expecting from the NAVADMIN messages as of 15 March 2013, versus the projected total for the entire FY 2013.

Table 3-Summarization of NAVADMINS

NAVADMIN	Number of Sailors Returned to Sea Duty as of 15 March 2013	Number of Sailors Projected to Return to Sea Duty as a Result of the NAVADMINS (Total for FY 2013)
230/12	31	180
227/12	141	194
229/12	521	350
Total	693	724

Billet Realignment and Restoration. Billet Realignment and Restoration is an initiative to reduce gapped billets at sea and provide a better balance for the sea shore flow. According to the Office of the Chief of Naval Operations (CNO) Total Force

Requirements Division (N12) personnel, this balancing will reduce 1,900 sea duty billet gaps over 5 years. The restoration is created by realignment of 1,227 Functional Activity Code General billets of non-sea-intensive ratings to sea-intensive ratings.⁶ Also, 800 shore duty billets were added, in addition to the 1,227 billets, for sea-intensive ratings using them for maintenance centers, training centers, and readiness centers as was done previously. We were unable to confirm the total effect of this effort on gapped billets.⁷ However, according to CNO N12 personnel, the realignment of 1,227 billets to sea-intensive ratings and adding 800 shore billets will contribute to the reduction of gapped billets at sea by reducing the imbalance of sea and shore billets.

T+X Accession Programs. The T+X accession program started with just four ratings during FY 2011. For Sailor's initial enlistment obligations, instead of the hard-and-fast 4-year enlistment, the formula "T+X" would be used. The "T" in the equation is the average length in months of initial training (boot-camp, "A" School, etc.); the "X" is equal to the calculated length of the first operation tour for the rating enlisted. The initial ratings in the pilot program were Aviation Ordnanceman (AO), Electrician's Mate (EM), Gas Turbine System Technician-Electrical (GSE), and Quartermaster (QM). These ratings were adjusted to 5-year enlistment obligations back in October 2011, as their "T+X" equaled close to 60 months. As of September 2012, there was a recommendation to add three more ratings to the program for FY 2014 (according to N1 personnel, as of December 2012, the three ratings were approved). Those three ratings are: Culinary Specialist (CS), Logistics Specialist (LS), and Logistics Specialist-Submarine (LSS).

As of December 2012, the following 11 additional ratings joined the list of 5-year obligation ratings for FY 2013 accessions: Aviation Boatswain's Mates (ABE, ABF, and ABH), Aviation Structural Mechanic Safety Equipment (AME), Boatswain's Mate (BM), Culinary Specialist-Submarine (CSSS), Gas Turbine Systems Technician-Mechanical (GSM), Machinist Mate-Submarine (MMSS/MMSSW), Operations Specialist (OS), and Ship's Serviceman (SH). We were unable to confirm the full impact of these efforts on gapped billets.⁸ However, according to CNO personnel, this program will contribute to the reduction of gapped billets for E5 and below Sailors on their first sea tour.

Manning Actions. The Navy has also used different types of manning actions to reduce gaps on ships that are scheduled for near-term deployment. For example, the Type Commanders all use cross-decking, diverts, and temporary additional duty assignment

⁶ Sea-intensive ratings only include those that are assigned the maximum sea tour lengths allowed by policy (i.e., 5 years for 1st and 2nd sea tours, and 4 years for 3rd and 4th sea tours). Sea Centric ratings are ratings whose Sea/Shore Flow Career paths result in at least 180 months (15 years) or more at sea over a 30-year time horizon, but are less than the maximum allowed by policy.

⁷ We were unable to quantify the effect of this effort, because of the number of different efforts that will affect gapped billets and because this effort is ongoing.

⁸ We were unable to quantify the effect of this effort, because of the number of different efforts that will affect gapped billets and because this effort is ongoing.

manning actions to reduce gaps before a ship deploys. Temporary additional duty assignments are normally between units of a similar-type duty.

In Calendar Year 2012, the Type Commanders reported that they used 2004 manning actions. See Table 4 for details:

Table 4 - Calendar Year 2012 Manning Actions

Manning Actions	Commander, Naval Surface Forces, Pacific	Commander, Naval Surface Forces, Atlantic	Commander Naval Air Forces Pacific/Commander Naval Air Forces Atlantic⁹	Total
Diverts	0	76	137	213
Cross-Decks	476	438	227	1,141
Temporary Additional Duty	169	179	302	650
Total	645	693	666	2,004

Overall, these actions did not reduce the number of gaps at sea duty; instead, they only shifted the gaps from one ship to another. Therefore, although the deploying ships had fewer gaps, the ships that were not deploying had increases in their gaps as a result of these manning actions.

Why These Initiatives Have Not Eliminated Critical Gapped Sea Billets

Critical sea billets will likely continue to be gapped despite the actions described above because the Navy, according to N1 personnel, made the following previous programming decisions: (1) reduced shore billets, which drove an imbalance in several enlisted ratings; (2) reduced the number of enlisted personnel, but has not reduced the number of surface ships at the same rate; (3) underfunded the Training and Transient, Patients, Prisoners and Holders accounts; (4) planned the decommissioning of four cruisers, but is still required by Congress to continue using the cruisers causing the loss of about 1,220 enlisted personnel; and (5) ended FY 2012 below enlisted end-strength.

Findings 2 and 3 address the other causes that contributed to gapped billets, which were the use of the Navy's sea shore flow model (sea shore rotation), the management of community health for enlisted ratings, training assignments, as well as PTS and Enlisted Retention Board actions.

Imbalance of Sea and Shore Billets. We found that gapped billets also exist because of the imbalance of sea and shore billets. According to our analysis, a balance of ship and shore billets is required to support a rotation from sea to shore and back again. The ratio

⁹ Commander, Naval Air Forces Pacific/Commander, Naval Air Forces Atlantic numbers are for FY 2012. These manning actions include aircraft carriers and squadrons.

of sea billets to shore billets cannot exceed the maximum of 5 years at sea to the minimum of 3 years on shore duty. In other words, the number of sea billets at any grade level cannot exceed 5/8's or 62.5 percent of the total billets at any rating after the Sailor's first sea tour. This conclusion is illustrated with the Operations Specialist (OS) rating. For example, the billets authorized for OS E-5 (2nd Class Petty Officer) at sea is 2,002 (or 71 percent of the E-5 billets); yet, due to the current sea shore flow, the maximum percent of OS E-5s at sea is 62.5 percent. This results in a consistent shortage at sea. Also, for the senior grade-level enlisted billets, when the rotation becomes 3 years at sea and 3 years on shore, the sea billets cannot exceed 3/6's or 50 percent of the total billets in any rating and senior grade level. This can be seen with the Gas Turbine System Technician (GS) rating at the E-8 level (Senior Chief), where the billets authorized for sea duty is 63.5 percent of E-8 billets, and the maximum percent of GS E-8s at sea is 50 percent. The sea shore imbalance is also made worse by Naval personnel who cannot rotate back to sea for other reasons such as medical conditions. We discuss the sea shore flow in further detail in Finding 3.

Other Observations/Causes

Reduction in the Number of Enlisted Personnel. The Navy has been reducing billets authorized, but did not reduce the number of surface ships that must be manned at the same rate. For example, we determined that the number of surface warships has gone from 115 in FY 2007 to 121 in FY 2012, with a high of 123 in FY 2010. Yet from FYs 2007 to 2012, the total manpower of the Navy has fallen each year. Table 5 shows by fiscal year, the number of enlisted Sailors in proportion to the number of active ships and submarines.

Table 5 - Comparison of the Number of Enlisted Personnel to the Number of Ships and Submarines¹⁰

Fiscal Year	Total Number of Enlisted Personnel Billeets Authorized	Total Number of Ships/Submarines
2003	322,915	297
2004	314,681	292
2005	305,735	282
2006	293,181	281
2007	281,772	278
2008	276,397	282
2009	273,177	285
2010	268,660	288
2011	268,957	285
2012	261,161	288

Underfunded Student and Transient, Patients, Prisoners, or Holdees Accounts.¹¹ On average, there were about 5,850 more enlisted Sailors who were students and unavailable for assignments than the Navy authorized billets for. According to Navy Personnel Command, the average number of students for the overall Navy is much greater than the billets authorized, especially at the apprentice level. This occurred because the Navy decided not to fully fund this account. In total, the student account is considered over-manned by about 26 percent as the result of not having enough funded billets.

We also found that on average, 2,286 more enlisted Sailors were Transients, Patients, Prisoners, or Holdees than the Navy authorized billets for. This account is mostly over-manned at the E5 and E6 level for journeyman Sailors. In total, the Transient, Patients, Prisoners, or Holdees account is over-manned by about 25 percent as the result of not having enough billets authorized. The over-manning of these accounts resulted in Sailors that cannot be distributed to fill gapped billets at sea.

Planned Decommissioning of Ships. Effective 1 October 2012, the Navy has removed the end-strength from four cruisers as the result of planned decommissioning of these

¹⁰ All of the historical information for this chart was found on the Naval History and Heritage Command Web site except for the FYs 2011 and 2012 Total Number of Enlisted Billeets Authorized data, which was provided by N1.

¹¹ The Sailors included here are those who were unavailable to be assigned to sea duty.

ships. The ships are the *USS COWPENS* (Carrier Group (CG)-63), *USS ANZIO* (CG-68), *USS VICKSBURG* (CG-69), and *USS PORT ROYAL* (CG-73). Although Congress expressed a need to have the Secretary of the Navy maintain the operational capability and perform the necessary maintenance on the cruisers, the funding and end-strength to operate and man these ships was not restored. Considering that each cruiser has between 305 to 319 enlisted Sailors onboard, these actions resulted in the loss of about 1,220 enlisted personnel (4 x 305 enlisted for each CG). This will have a significant impact on gapped billets at sea, and the gaps at sea will increase as a result of this action.

Navy Ended FY 2012 Below End-Strength. In FY 2012, the Navy ended the year below authorized enlisted end-strength by about 7,885 Sailors. The Navy used multiple, and in some cases, simultaneous force management levers to shape its force. These included significant reductions in PTS re-enlistment quotas, reductions in selective re-enlistment bonuses, early-out waivers, and Enlisted Retention Board actions. However, it appears that those actions occurred without a full consideration of the magnitude and potential long-term effects of such decisions. Specifically, the Navy attempted to reduce manning by about 3,000 Sailors (on contract) through the FY 2012 Quota-Based Navy Enlisted Retention Board. However, in total, the Navy ended the year below authorized enlisted end strength by about 7,885 Sailors. These actions have contributed to the number of gapped billets at sea.

We also found that the Navy has a “promote to vacancy system.” This means that for authorizations at the E-9 level (Master Chief), an E-8 (Senior Chief) will be promoted into the vacant authorization. After which, an E-7 (Chief) will be promoted into the new E-8 vacancy, and so on. The net effect is that when the Navy ends the year below end-strength, the empty authorizations will be E-1 (Seaman Recruit) to E-3 (Seaman) apprentice levels as they will be promoted to fill E-4 vacancies. Since the majority of all apprentice billets are assigned to sea duty for the first tour in the Navy, gaps at sea may be created in many ratings at the apprentice level.

Effect of Gapped Billets

To determine the effect of gapped billets on the Fleet, we visited seven ships and interviewed senior officer and enlisted personnel and/or a representative on each. Personnel from all seven ships visited indicated that gapped billets had negative effects onboard their ships. Some of those negative effects included that readiness of Surface Fleet ships may be reduced, Sailors may be required to work longer hours to make up for gapped billets, and junior Sailors may not receive needed supervision as a result of gapped senior billets. They were also concerned that Sailors were being overworked, resulting in higher stress levels and lower morale. Additionally, concerns about the increased potential for safety hazards, and the ability of their crews to properly maintain and prepare ships for inspections, were also raised during the interviews.

Borrowing Sailors From Other Ratings. Gapped critical billets have also resulted in Sailors from other ratings having to help perform the mission of gapped ratings onboard ships. This makes it difficult for Sailors working in the borrowed ratings to complete their duties. Based on our interviews, this effect creates potential morale problems, and causes extra burdens on Sailors.

Cross-Decking. Personnel from all seven ships identified cross-decking or moving Sailors from one ship to another for temporary duty, as having a negative impact on the ships and the Sailors. Specifically, it was noted that it leaves the ship the Sailor comes from short-handed, potentially causes additional work for the losing ships' Sailors, potentially impacts the cross-decked Sailor's personal life, affects morale, and could potentially affect retention. The deploying ships are affected because these Sailors do not train with the crew enough before deployment to create effective teamwork. Personnel on four of the seven ships visited stated that they are concerned about sending their Sailors to training because if they do, the Sailor may be sent to another ship. Specifically, they noted that it impacts training decisions due to the threat of losing a Sailor that was just trained, and serves as a disincentive to provide Sailors with training.

Billets Authorized Are Increasing, But the Navy Manning Plan is Reducing. On four of the ships visited, we were informed by commanding officers and executive officers that, even though billets authorized for their ship have increased, the Navy Manning Plan (fair share of distributable inventory) has been dropping. Based on our reviews, we found that the commanding officers we spoke with had a perception that the problem is getting worse, and that the manning models being used are not solving the problem. Additionally, as earlier stated, the under manning causes Sailors to be overworked, hurts morale, and may affect readiness.

Ships Are Being Manned by Novices. An "experience" gap in at least one of the ratings reviewed was noted by personnel on the seven ships we visited. Personnel stated that the experience level has decreased and that many Sailors are on their first tour. Specifically, it was noted that proficiency, technical knowledge, and training opportunities were all diminished as a result. One Commanding Officer interviewed stated, "Billion dollar warships were now being manned with novices." In addition, a lack of 1st Class Petty Officers in the selected ratings was noted by three of the seven ships visited. Gapped Chief Petty Officer billets in the selected ratings, also was noted as a concern by personnel from six of the ships we visited. Specifically, they stated that in the absence of those supervisory personnel, training is impacted and readiness may be affected.

Additional information on the effects of gapped billets can be found in Exhibit F.

Potential Solutions for Reducing the Number of Gapped Billets Considered or Should be Considered by Navy Senior Leadership. During the audit, we identified potential solutions to reduce the number of gapped billets based on briefings provided by

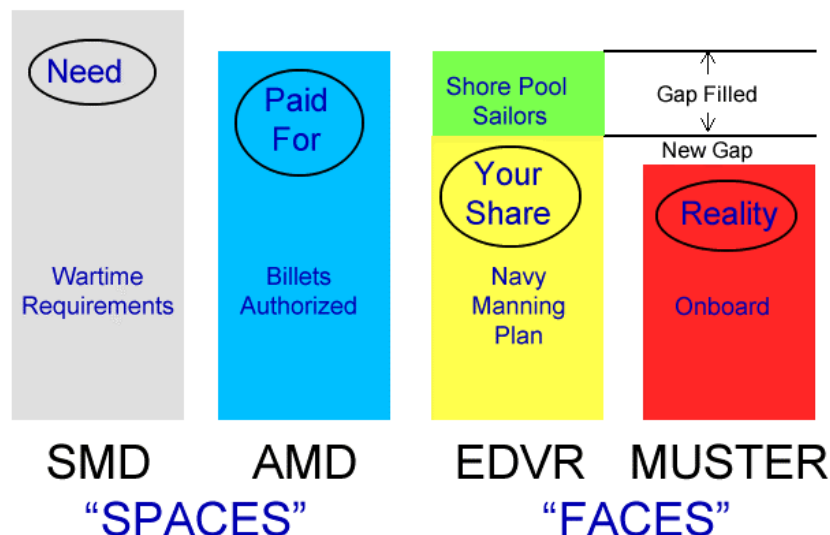
Navy senior leadership. Based on our review of various briefing charts, it appears that the following potential solutions could be useful in preventing gapped billets:

- Continue to use the manning requirements produced by Navy Manpower Analysis Center to determine billets authorized that should be fully funded for the surface Fleet at sea;
- Using a sea/shore flow model with simulation capabilities to determine the number of shore billets needed to support the billets authorized at sea, then fully fund the billets authorized for these shore billets;
- Determine the size of the student account required to support the sea billet authorized and fully fund it; and
- Determine the size of the Students, Transients, Patients, Prisoners, or Holdees account required to support the sea billet authorized and fully fund it.

In our opinion, the difficulty with these solutions is that they would probably require a significant increase in the billets authorized for the Navy. As earlier stated, the Navy is currently prioritizing the gaps on the ships that are scheduled to deploy first and filling these billets first. Commander, Naval Surface Forces, Pacific and Commander, Naval Surface Forces, Atlantic are both using cross-decking, diverts, and temporary additional duty to also fill the gaps for deployers. This solution has been referred to as “just in time” manning. The current efforts of the Navy, listed in this finding, are addressing many of the root causes of gapped billets, but without more personnel the root causes cannot be fixed.

Based on our review, we have identified a potential solution to filling some of the gapped billets in the absence of an increase in billets authorized. Our analysis showed that most of these gaps can be measured by subtracting the number of billets in the Navy Manning Plan from the billets authorized as shown in Figure 1. There should be a Sailor on shore duty without a billet for every gap at sea, if the Navy is manned to planned end-strength. We came to this conclusion, because for each authorization the Navy should have one person included in the Navy end-strength. If this person is not at sea, the person must be on shore. Therefore, the authorized sea billets, less Navy Manning Plan sea duty personnel, should be available to create a pool of shore duty Sailors stationed at Naval Surface Forces, Pacific and Naval Surface Forces, Atlantic who are under the control of those commands, and who could be sent temporary additional duty to ships that are not in the Integrated/Advanced phase before deployment window, to fill gapped billets that are necessary for maintenance and training onboard the ships. Those Sailors could be sent temporary additional duty to ships that will not deploy, to fill the gaps on the ships that will not be deploying during the temporary additional duty time. Figure 2 illustrates our analysis.

Figure 2- Requirements to Onboard Personnel Showing How Shore Pool Sailors Can Close Part of the Gap



Based on our analysis, the advantages of placing “Shore Pool Sailors” on ship temporary additional duty are:

- In the event of a national emergency, ship readiness will be increased as a result of ships manning to billets authorized;
- Sailors will retain skills during shore duty;
- “Shore Pool Sailors” will fill gapped billets on ships in port and rotate to another ship in port when billets are filled by detailers;
- Maintenance and training onboard ships will continue and not be hindered; and
- Enlisted leadership would be improved on ships by having senior enlisted personnel available in the shore pool to fill the gaps.

During the audit, Office of Chief of Naval Personnel and Navy Personnel Command leadership expressed concerns that a shore pool of Sailors would create gaps on shore that are now being filled by Sailors who cannot rotate to sea duty yet. We did not review the types of shore billets currently being filled by Sailors with sea intensive ratings. However, we have been told that, in some cases, those personnel are not working within their ratings while performing shore duty.

Further discussions with the Office of Chief of Naval Personnel led to the concept of a standardized personnel augmentation procedure within Fleet Concentration Areas (FCAs) that could be exercised to support material readiness and training efforts for undermanned ships while in port. In concept, similar to a force protection augmentation plan, a Material Readiness and Training Augmentation Unit (MRTAU) could be established on

an ad hoc basis for a fixed amount of time with personnel sent temporary additional duty (TAD) from shore commands and transient personnel units (TPUs) within the FCA.

This concept is similar in many ways to a shore pool of Sailors. Therefore, we believe that U.S. Fleet Forces Command and Navy Personnel Command, as well as other applicable commands, should work together to study the possibility of creating a MRTAU of Sailors as a way to address its gapped billets at sea.

Recommendations and Corrective Actions

Our recommendations, summarized management responses, and our comments on the responses are as follows. The complete text of the management response is in the Appendix.

We recommend that Deputy Chief of Naval Operations (N1); Commander, U.S. Fleet Forces Command; Commander, Pacific Fleet; and Commander, Naval Surface Forces in coordination with Commander, Navy Personnel Command:

Recommendation 1. Work together to study the possibility of establishing a standardized personnel augmentation procedure within Fleet Concentration Areas that could be exercised to support material readiness and training efforts for undermanned ships while in port.

Deputy Chief of Naval Operations (N1) response to Recommendation 1. Concur. Deputy Chief of Naval Operations (N1) will coordinate with Commander U.S. Fleet Forces Command, Commander Naval Surface Forces, U.S. Atlantic Fleet, Commander Pacific Fleet, and Commander, Navy Personnel Command to establish a working group to study the feasibility of a Material Readiness and Training Augmentation Unit (MRTAU) or other procedure to standardize personnel augmentation within Fleet concentration areas. Study results expected to be provided by March 2015.

Naval Audit Service comments on management response to

Recommendation 1. Actions planned by management meet the intent of the recommendation. The recommendation is considered open pending completion of agreed-to actions.

Finding 2: Community Health

Synopsis

The Navy inadvertently did not allow a sufficient number of Sailors in sea billets to re-enlist, and removed too many Sailors with the Enlisted Retention Board.

Although the Navy's Spread Enlisted Programmed Authorizations (Spread EPA) Model provides a good starting point for modeling community health, it:

- Does not consider enough factors to accurately predict the manpower needs of the Navy by year groups;
- Uses invalid or inaccurate assumptions in its calculations; and
- Does not properly adjust for different economic conditions.

We also found that:

- PTS actions did not give enough priority to Navy Enlisted Classifications (NECs) when determining which Sailors to retain or separate; and
- Enlisted Community Managers that used the Spread EPA model along with other force-shaping tools such as PTS and Enlisted Retention Board, could not always explain how the EPA line on the model was calculated.

As a result, enlisted personnel with skills that matched the Navy's current unfilled needs at sea, were removed from the Navy. The Navy ended FY 2012 below enlisted end-strength after too many enlisted Sailors were removed, and this loss resulted in less experienced Sailors replacing those who separated.

Discussion of Details

Background

The Navy includes many different communities which are made up of groups of enlisted ratings and officer designations (e.g., Naval Special Warfare, Aviation, etc.). The Bureau of Naval Personnel Military Community Management (BUPERS-3) is responsible for managing these individual communities, ensuring a sufficient supply of personnel for each level of seniority with appropriate experience in order to meet the Navy's short- and long-term requirements. Community Managers, in part through BUPERS-34 (Metrics and Analytics Division), monitor, predict, and develop the Navy's annual retention rates

and goals as part of establishing the upcoming fiscal year retention objectives. They are also responsible for ensuring enlisted community health¹² to support fleet readiness and force structure requirements. The managers' mission is to balance the needs of today's Navy while ensuring that the Navy of the future has the appropriate personnel for decades to come. Doing this requires an understanding of how personnel decisions (accessions, promotions, compensation, etc.) interact over time to produce future inventory levels. For this reason, Community Managers need decision support tools that provide these projections.

Measuring Navy manpower and personnel forecasting accuracy is challenging. Current BUPERS-3 manpower models and/or tools are limited in scope, scalability, and usability. The forecasting practices of those models and tools are typically constrained to short-term, ad hoc predictions due to the reliability of available tools and methods. In May 2009, Military Personnel Plans and Policy Division (N13) stated, "We review each rating weekly with the Community Managers and take a monthly look at how we are looking with re-enlistments before making adjustments. We're carefully watching all re-enlistment and retention behavior." Without such tools, Community Managers will continue to react to constant, unplanned variations in personnel "stay-or-leave" behavior. This will result in the need for continued policy changes and expense to mitigate the potentially large personnel changes and continuous inventory changes required to keep officer and enlisted communities healthy and end-strength within tolerance of Congressional mandates.

Pertinent Guidance

Military Personnel Manual 1440-060, "Perform to Serve," dated 29 June 2006, provides that PTS is a long-term force shaping tool that aids in leveling rating manning between over-manned and under-manned ratings, while managing the quality of re-enlistment applicants by controlling the authority for re-enlistment. It also provides guidance on the approval process regarding quotas and ranking.

NAVADMIN 129/11, dated April 2011, announced an "FY 2012 Quota-Based Enlisted Retention Board." Unprecedented retention and reduced attrition rates across the Navy have resulted in a requirement to rebalance the force. The purpose of this board is to reduce over-manning in ratings projected to be over 103 percent manned in FY 2012.

For additional background information and pertinent guidance, see Exhibits A and D.

¹² Community health is how the Department of the Navy (DON) evaluates a rating to include recruiting, accessions, inventory, training, career progression, and flow points.

Audit Results

The Navy inadvertently did not allow a sufficient number of Sailors in sea billets to re-enlist and removed too many Sailors with the Enlisted Retention Board.

Although the Navy's Spread EPA Model provides a good starting point for modeling community health, it:

- Does not consider enough factors to accurately predict the manpower needs of the Navy by year groups;
- Uses invalid or inaccurate assumptions in its calculations; and
- Does not properly adjust for different economic conditions.

We also found that:

- PTS actions did not give enough priority to NECs when determining which Sailors to retain or separate; and
- Enlisted Community Managers that used the Spread EPA Model, along with other force shaping tools such as PTS and Enlisted Retention Board, could not always explain how the EPA line on the model was calculated.

Model Improvements Needed

To determine the factors the model used, we obtained the model and analyzed the mathematics used in it. We also interviewed personnel from the Chief of Naval Operations and the Bureau of Naval Personnel.

Factors Considered. We found that the model uses only three factors to calculate the EPA curve for each rating in a fiscal year. Those factors are: historic continuation rates, historic gain rates, and planned enlisted end-strength. However, the model does not consider enough other factors, such as economic data and incentive pay, to accurately predict the manpower needs of the Navy by year groups. Additionally, if any of these inputs are incorrect, the model will not produce the correct EPA spread.¹³ The end-strength is a budget manpower estimate that is determined by the Navy's budget. This number is based on budget decisions and Navy manpower requirements. End-strength requirements are fiscal year military personnel authorizations provided by Congress under United States Code Title 10. Resource sponsors within the Navy provide input to determine what the end-strength will be for each rating, so the total will equal the total mandated by Congress. Per BUPERS, continuation rates are calculated by taking the beginning-of-year inventory obtained from the Navy Manpower Program and Budget

¹³ Dividing the authorizations by year group.

System (NMPBS) and comparing it to the end-of-year inventory by Social Security number (SSN). If an SSN existed at the beginning of the year and remained at the end of the year, they are counted as a continuation. If the SSN existed at the beginning of the year, but was not there at the end of the year, they were a loss. If the SSN did not exist at the beginning of the year, but was at the end of the year, they are counted as a gain. This is performed for each Length of Service (LOS) and Enlisted Rating (Enlisted Management Code (EMC)) in the Navy for the year for which gains and continuation rates are calculated. The continuations are divided by the beginning-of-year inventory to obtain the continuation rate; the gains are divided by the end-of-year inventory to obtain the gain rate for each LOS and EMC code. The model does not calculate a loss rate. These continuation and gain rates are then sent to the contractor who enters them into the Spread EPA template. Once entered, the template produces a graph that shows the Spread EPA that is placed on the community health quad charts for each rating. The continuation and gain rate is used by the model to create the EPA spread, or the top line, on the chart that the Community Managers use to shape the community manpower. The bars on the graph are calculated to represent the current inventory of Sailors on the spreadsheet.

A primary assumption of the model is that the continuation and gain rates will be in a steady state for 30 years. The actual math used to create the numbers is based on a matrix. This matrix is called the steady state survival contributions from each gain LOS cell. The matrix is based on the continuation rates. The cells of the matrix are calculated by spreading the effect of these continuation rates over 30 years. Each column represents a year. The continuation rates are updated and re-projected every year. The mathematics of the model provides to the Community Managers the number of Sailors that should be in each year group and the total required gains or Navy accessions. The Community Managers can assess the results, and if they do not agree with the results based on the current continuation rates, they can use the Spread EPA template to calculate the curve using the weighted average of continuation and gain rates for up to 5 years of data, which normalizes the results and changes the graph.

Assumptions. The Navy's Spread EPA model uses invalid or inaccurate assumptions and will not adjust for different economic conditions. The main assumption used by the model is that the continuation and gain rates will be in a steady state for 30 years. However, based on our analysis, we found that this assumption is not valid. Instead, we determined that the continuation rates change significantly based on the economy or because of manning actions taken in response to the model results. For example, during FY 2008, the relatively good economy¹⁴ caused the continuation rates to be lower than in FY 2009 when the economy was not as good. Table 6 shows the continuation rates for the Operations Specialist rating:

¹⁴ Our conclusions about a good economy or bad economy are based on 30 years of unemployment data published by the Federal Government.

Table 6: Continuation Rates of Sailors for the Operations Specialist (OS) Rating

	2008	2009	2010	2011	2012
EMC Code	B440	B440	B440	B440	B440
RATE	OS	OS	OS	OS	OS
LOS1	83.10%	91.63%	93.51%	97.00%	96.18%
LOS2	84.09%	92.36%	93.21%	92.73%	92.89%
LOS3	65.89%	91.82%	89.43%	88.10%	89.90%
LOS4	50.00%	67.17%	66.71%	58.42%	50.25%
LOS5	64.25%	74.38%	77.62%	77.76%	82.96%
LOS6	82.01%	91.02%	91.97%	89.55%	86.49%
LOS7	79.93%	92.22%	95.72%	94.05%	93.04%
LOS8	72.36%	86.72%	90.87%	87.33%	76.53%
LOS9	73.38%	85.81%	86.65%	88.84%	73.15%
LOS10	80.00%	89.14%	87.47%	90.80%	71.57%
LOS11	83.40%	93.57%	92.95%	93.50%	69.72%
LOS12	88.28%	91.03%	91.60%	93.13%	76.85%
LOS13	85.71%	93.70%	92.96%	94.12%	79.63%
LOS14	88.24%	92.78%	83.86%	79.70%	70.22%
LOS15	89.24%	93.71%	95.03%	96.22%	89.74%
LOS16	90.13%	94.87%	96.32%	95.35%	97.75%
LOS17	92.09%	97.18%	95.70%	96.15%	95.76%
LOS18	96.30%	96.84%	97.83%	98.86%	97.97%
LOS19	42.25%	97.27%	97.40%	98.54%	98.84%
LOS20	40.23%	39.50%	38.20%	48.68%	45.45%
LOS21	50.53%	76.92%	79.75%	84.38%	78.67%
LOS22	57.58%	69.70%	81.43%	86.89%	80.00%
LOS23	45.71%	72.00%	76.09%	85.19%	86.79%
LOS24	36.11%	51.43%	27.78%	60.00%	57.78%
LOS25	20.00%	62.50%	61.11%	70.00%	63.16%
LOS26	13.33%	20.00%	30.00%	27.27%	28.57%
LOS27	41.67%	40.00%	100.00%	100.00%	100.00%
LOS28	40.00%	60.00%	100.00%	66.67%	100.00%
LOS29	0.00%	50.00%	100.00%	100.00%	50.00%
LOS30	0.00%	0.00%	0.00%	0.00%	0.00%

Note: EMC = Enlisted Management Code
 LOS = Length of service (in years)
 B440 = EMC for the OS rating.

Also, when large numbers of Sailors were removed from the Navy because of PTS and Enlisted Retention Board actions, the continuation rates decreased. Additionally, it was noted that the model uses the assumption that the continuation rates used to calculate the EPA curve will remain constant for 30 years. However, the above chart shows that the

continuation rates change significantly based on the economy. Therefore, this key assumption of the model breaks down quickly as the economy changes.

Another invalid assumption contained in the model is that the current inventory of Sailors does not need to be a part of the model calculation. Instead of using the current inventory in the model, the Navy is attempting to adjust the current inventory to the model. It appears that the Navy is attempting to shape the enlisted force in each rating to match the output of the Spread EPA model by reducing enlisted personnel using PTS and Enlisted Retention Boards.

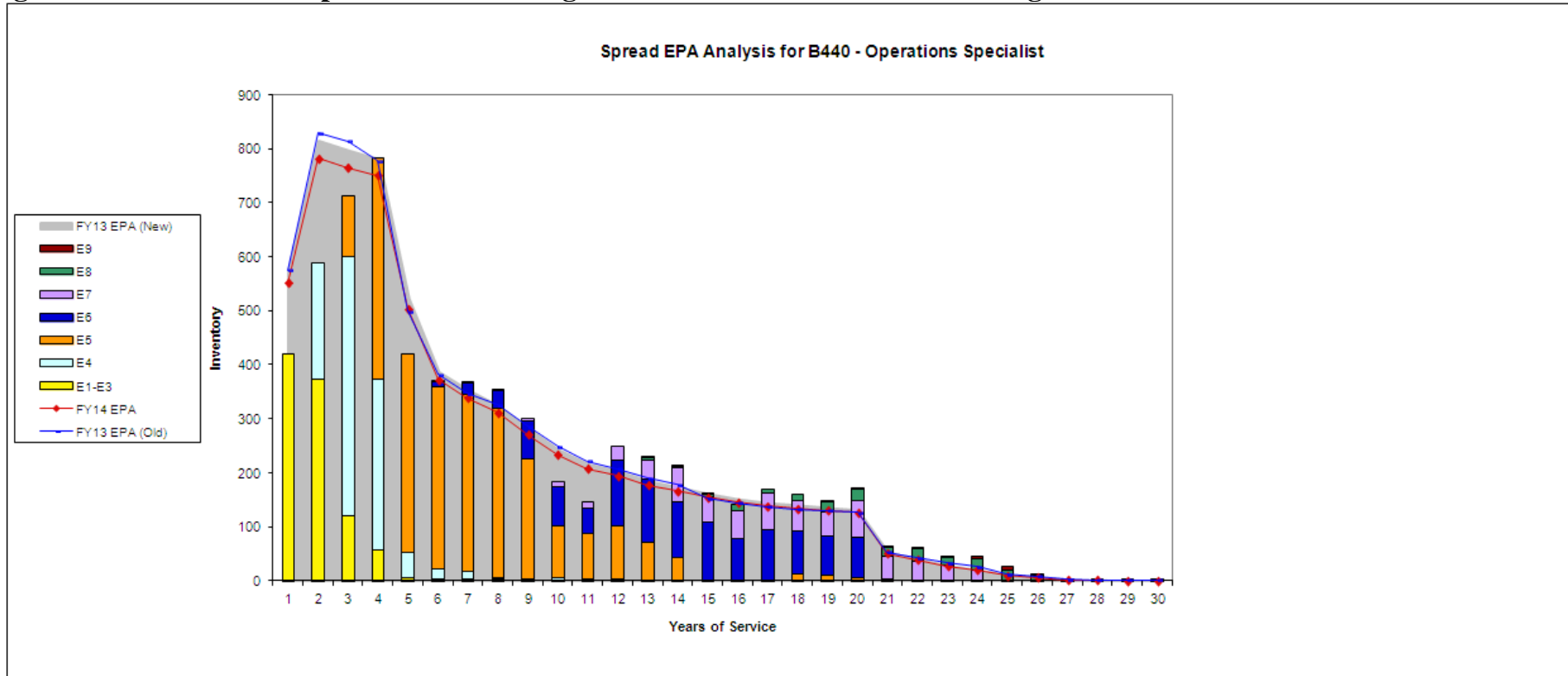
Another assumption that the model makes is that the Navy uses year groups¹⁵ to manage manpower requirements. The Navy has a promote-to-vacancy¹⁶ system and all of the Navy's manpower requirements (billets authorized) are designated by rate, rank, and NEC. None of the manpower requirements are specified by year groups or the number of years a Sailor has been in the Navy. The use of year groups in models limits the models' usefulness. Although they can lower the number of Sailors in a year group, they do not have effective tools to raise the number of Sailors in a previous year group if end-strength increases. Further, we concluded that the model's assumption that Navy manning actions are not included in the continuation rates is not valid because every action that the Navy takes to control continuation rates becomes imbedded in the continuation rate for that year. These actions include removing Sailors from the Navy using PTS or Enlisted Retention Board. It also includes the Navy's attempts to increase retention using re-enlistment bonuses. Actions taken to lower the number of Sailors in a year group adversely affects continuation rates as they cannot be adjusted for before the model uses these rates in its calculations. The Spread EPA model is based on historical continuation rates to set the EPA line represented in red in the following charts.

The Navy's Spread EPA model also is not adjusted for different economic conditions. To analyze the effectiveness of the model, we input FYs 2008 and 2009 continuation rates with the same end-strength requirements using the October 2012 template. As earlier stated, during FY 2008 the economy was relatively good compared to FY 2009. Therefore, we used 2009's higher continuation rates to represent a year that had a difficult economy. The results are shown below (see Figure 3). The FY 2014 red Spread EPA line is very similar to the currently used (FY 2013 blue line) EPA spread. This model result would look good to a community manager because it is very close to the personnel onboard. This is good for a community manager because very few force-shaping actions would be required to reduce manning to the red line of the model.

¹⁵ Year groups are Sailors who entered the Navy in the same year.

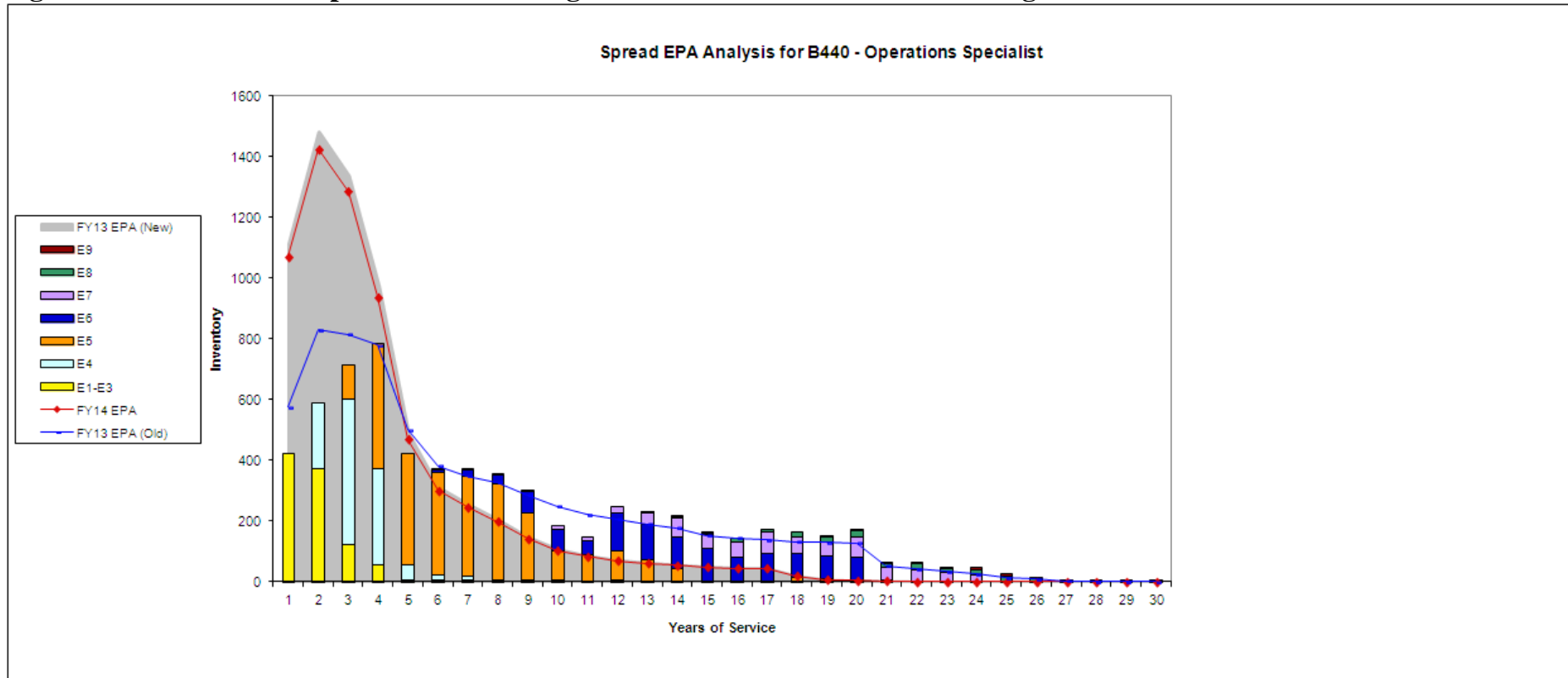
¹⁶ Promote-to-vacancy, as stated by Office of the Chief of Naval Operations N13, is the Navy policy of promoting servicemen when the number of Sailors is less than the number of authorizations for that rate and rank. This is done so the number of Sailors is equal to the number of authorizations for that rate and rank. This does not happen if there are not enough qualified Sailors to promote.

Figure 3 – October 2012 Spread Enlisted Programmed Authorization Model Using 2009 Continuation Rates



For comparison purposes, we then entered 2008's lower continuation rates into the same model using the October 2012 template. The 2008 continuation rates represented a year that had better economic conditions. Figure 4 shows the results of the model using that continuation rate.

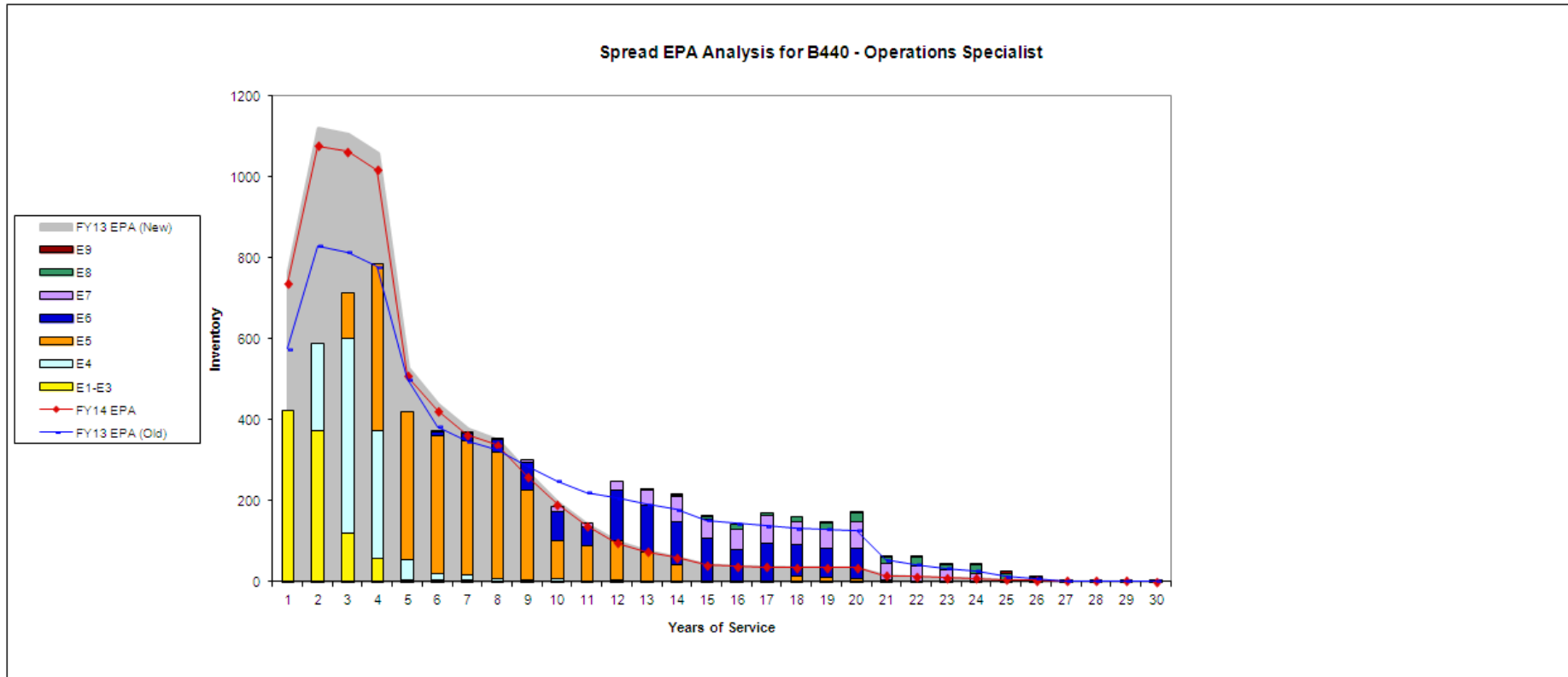
Figure 4 – October 2012 Spread Enlisted Programmed Authorization Model Using 2008 Continuation Rates



As shown above, according to the FY 2014 Spread EPA red line of the model, the Navy Operations Specialist rating should be almost entirely manned by Sailors with less than 6 years of service. The red dots on the red Spread EPA curve represent how many Sailors in each year group the model says the Navy needs. The blue dots on the blue Spread EPA curve are the previous year's projection and does not change in the model. This is an indication that they need more Sailors in year groups 1 through 5. These results would produce a signal to the Community Managers that they need to remove most of the experienced Operations Specialist Sailors from the Navy, because the red dots are below the onboard personnel for the year groups 12 to 30. However, because this may not be acceptable to the Community Managers, because of the unreasonable manning reductions required, they may use the option to normalize the results by using 3- or 5-year weighted continuation rates to make the model results more like the previous years.

Finally, we entered the FY 2012 continuation rates into the same model using the October 2012 template, as shown in Figure 5.

Figure 5 – October 2012 Spread Enlisted Programmed Authorization Model Using 2012 Continuation Rates after Fiscal Year 2012 Perform To Serve and Enlisted Retention Board Actions



The 2012 continuation rates represent a year that had a large amount of Sailors removed from the Navy using PTS and the Enlisted Retention Board, which produced a Navy Operations Specialist rating that is almost completely manned by Sailors with fewer years of service, because the red dots are above the onboard personnel for the first 6-year groups. This may also produce a signal to the Community Managers that they need to remove more of the experienced Sailors from the Navy, where the red dots are below the onboard personnel. For example, if the models show that the ratings are overmanned, manning actions are taken to thin the rating which results in fewer Sailors allowed to re-enlist through PTS and can result in ERB where Sailors are separated. This results in a smaller pool of Sailors and the pool may not be large enough to fill all the sea duty billets, resulting in gapped billets at sea. Again, because this may not be acceptable to the Community Managers, they may use the option to normalize the results by using 3- or 5-year weighted continuation rates. Figure 5 also shows that manning actions, such as PTS or re-enlistment incentives, taken by the Navy are imbedded in the continuation rates and that the model cannot adjust for these actions.

Use and Understanding of the Model

We interviewed six Community Managers at the Bureau of Naval Personnel to determine how the calculations for the model were done. However, those Community Managers that used the model, along with other force-shaping tools such as PTS and Enlisted Retention Board actions, could not also always explain how the enlisted programmed authorization line on the model was calculated. The Community Managers used the results of the Spread EPA to drive management decisions pertaining to manning actions.

We also found that if the Community Managers do not view the results produced by the model as favorable, based on the current continuation rates, they can override the results. Specifically, they can use the Spread EPA template to calculate the curve using the weighted average of continuation and gain rates for up to 5 years of data. They do this to normalize the results and change the shape of the graph. Doing so causes the model to be less variable. As result, we have no assurance that Community Managers understand how the model should be used or if they are making manning decisions that could adversely affect the overall manning for the Navy.

The most critical point of modeling the community health is the end of the first enlistment of Sailors (which can vary in length depending on the length of enlistment). This point in the model is where the most critical continuation rate occurs. The next critical point is the end of the second enlistment. These two points are where the Navy can work on re-enlistment rates to manage the health of the community. According to the Bureau of Naval Personnel Spread EPA methodology, “It’s important to consider the impact of your curve due to continuation rates, especially at decision points, or those points in your Length of Service curve where Sailors may be making re-enlistment decisions. For example, if you draw a curve that demands an unrealistic continuation rate at decision points, for your community, you may want to reconsider your graph.”

The Deputy Chief of Naval Operations N1 began changing the length of the first enlistment for ratings as a result of the T+X Accession Program starting in FY 2011, with four ratings. The initial ratings in the pilot program were Aviation Ordnanceman (AO), Electrician's Mate (EM), Gas Turbine Systems Technician-Electrical (GSE), and Quartermaster (QM). Instead of the 4-year enlistment for the Sailor's enlistment obligation, the formula "T+X" would be used. The "T" in the equation is the average length in months of initial training (boot-camp, "A" School, etc.); the "X" is equal to the calculated length of the first operation tour for the enlisted rating. These ratings were adjusted to 5-year obligation ratings back in October 2010, as their T+X equaled close to 60 months.

The result of this initiative on the Spread EPA model is that the decision point moves to a different year in the Spread EPA curve. The consequence of this change is that until these new Sailors reach this first decision point (e.g., the 5-year mark for the ratings discussed in the previous paragraph) their continuation rate will be very high, yet the model will show a large drop in the continuation rate after they pass the old decision point (e.g., the 4-year mark or FY 2015). This is because the Spread EPA authorization model will not adjust to this new re-enlistment point until a year after the first group of Sailors with the new decision point, because it only uses historical data. If the Community Managers use a 5-year average continuation rate, it will not be realized until 5 years after the first group of Sailors with the new decision point. Therefore, for 1 to 5 years, the Spread EPA model will tell the Navy that they are over-manned in that rating for many of the length of service columns in the model, when in fact they are not over-manned. This could lead to unnecessary reductions in personnel and an increase of gapped billets.

Perform to Serve

We found PTS actions did not give enough priority to Navy enlisted classifications when determining which Sailors to retain or separate as required by Military Personnel Manual 1440-060, "Approval Process," which provides criteria for how Sailors will be competitively ranked. This process was updated via NAVADMIN 352/10, dated October 2010. The revised process was:

- **Step 1: Commanding Officers Recommendation for Retention** – Sailor's most recent evaluation must indicate that the Sailor is recommended for retention.
- **Step 2: Pay grade** – Highest pay grade stacks to top.
- **Step 3: Frocked** – The system will look to determine who is in a higher pay grade. Therefore, Sailors will "stack" above their peers who were not selected for advancement.
- **Step 4: Evaluations** – Average of up to last five evaluations.

- **Step 5: Critical NEC Held** – Those with a critical NEC code will be stacked above non-critical/No-NEC Sailors.
- **Step 6: Number of Physical Fitness Assessment Failures in Last 4 Years** – Algorithm only counts Physical Fitness Assessment Failures in Last 4 Years.
- **Step 7: Time remaining to Soft End Active Obligated Service/Decision Point** – This is only used in the event of a tie breaker between otherwise equally matched Sailors.
- **Step 8: Enlisted Community Manager Final Review** – Enlisted Community Managers review for content and accuracy after the “Rack and Stack” process to ensure that the “Right Sailor” secures a quota to re-enlist.

As shown above, according to the steps used in the updated process, “Critical Navy Enlisted Classifications Held” is the 5th step in the approval process of ranking Sailors for receiving a PTS quota. This step in the determination criteria is in direct conflict with the personnel manual which places “Critical Navy Enlisted Classification” above the “Evaluations” category when making the decision. N13 personnel also stated that once PTS quotas are set, they use an algorithm to determine which Sailors are allowed to re-enlist with a PTS quota. The algorithm uses the step-by-step process noted above to rank Sailors to determine who will get a quota. Sailors that are “stacked” higher than their peers are given a quota and are allowed to re-enlist.

Peform to Serve Quota Management Tool. In FY 2012, the Enlisted Community Managers used the results of the Spread EPA model as inputs to a locally developed model called the “PTS Quota Planner” to determine the PTS quotas for each enlisted rating. During the audit, we requested the methodology and support documentation to show how PTS and Enlisted Retention Board quotas were calculated in FY 2012. The only documentation we received on how the PTS quotas were calculated was a Microsoft PowerPoint tutorial on the PTS Quota Management Tool.

Our review of the tutorial showed that the PTS Quota Management Tool calculates the over-manning by year group using the Spread EPA over specific year groups. Therefore, we concluded that the PTS quotas are used to reduce manning in specific year groups to the Spread EPA curve developed in the model, as stated above. The Community Managers have the ability to consider the results of other models and tools, but the slides gave no indication that the other models and tools were used in the calculations of the PTS Quota Management Tool. The Community Managers can also override the results of the PTS Quota Management Tool if they believe the other models and tools produce a more favorable result. The PTS Quota Management Tool records this override in its logs if the Community Managers use it. This tool and logs were requested during the audit, but were not provided by Bureau of Naval Personnel.

Enlisted Retention Board Quotas. We were not provided a detailed methodology for establishing Enlisted Retention Board quotas. We were only provided an overview of the process. The Enlisted Retention Board quotas were set by the Bureau of Naval Personnel by rating and years of service. Based on interviews with Community Managers, we determined that they used the Spread EPA to determine which ratings and year groups were over-manned. Some of the Community Managers also stated that they used other information as well to determine quotas.

We also found that there is no indication from this tutorial that the PTS Quota Management Tool has an internal control to check the Enlisted Retention Board quotas to ensure the two processes are not each trying to reduce people in the same year group. According to personnel from the Bureau of Naval Personnel, they also used other factors to calculate PTS quotas. We requested the supporting documentation they used to calculate FY 2012 PTS quotas and Enlisted Retention Board quotas. However, personnel from the Bureau of Naval Personnel did not provide the requested data. As a result, we were not able to verify if personnel used any other factors to determine PTS quotas other than the Spread EPA model.

Billet Realignment/Restoration. Billet Realignment/Restoration is an initiative to reduce gapped billets at sea and provide a better balance for the sea shore flow. The realignment is created by realignment of 1,227 Functional Activity Code General billets of non-sea-intensive ratings to sea-intensive ratings. Also, the restoration of 800 additional shore duty billets were added for sea-intensive ratings.

This will introduce an increase of 2,027 billets in the planned end-strength into the Spread EPA model for sea-intensive ratings, resulting in higher requirements for each LOS year group. Community managers have been using the model for many years to reduce personnel in each year group through PTS and the Enlisted Retention Board. There are no tools available to the Community Managers to suddenly increase personnel in all the year groups across the model.

Summary

Overall, we concluded that the Navy's Spread EPA Model provides a good starting point for modeling community health; however, it:

- Does not consider enough factors to accurately predict the manpower needs of the Navy by year groups;
- Uses invalid or inaccurate assumptions in its calculations;
- Does not properly adjust for different economic conditions;
- Has limited data input;
- Is unable to adjust for longer enlistments; and

- Does not include onboard personnel in the model.

As a result, enlisted personnel with skills that matched the Navy's current unfilled needs at sea were removed from the Navy; the Navy ended the year 7,885 Sailors below enlisted end-strength potentially creating gaps at sea, and fewer experienced Sailors were available to replace those separated. Senior leadership within the Navy stated that the Navy put too many Sailors out as a result of levers executing at the same time (i.e. PTS and Enlisted Retention Board). As a result, we requested that the Bureau of Naval Personnel provide the methodology and supporting documentation (i.e., calculations) used to determine what internal controls had been established to prevent reducing too many enlisted personnel out of the Navy. However, they did not provide us with the requested information. We were unable to verify that sufficient internal controls were in place to prevent the Navy from removing too many Sailors from the Navy.

We also determined that top Navy officials had issues with the overall PTS process. According to a *Navy Times* article, "PTS Needs Overall, CNO Says," dated 21 May 2013, the bottom line in the Fleet is that PTS causes stress for the Sailors, which derived from an overall lack of trust in the system. The article concluded that this distrust of the system was identified in a 2007 study of PTS conducted by the Center for Naval Analysis, which stated that the current stacking system algorithm is too complex to be transparent to Sailors. Further, the study concluded that 8 percent of rejected Sailors were quality Sailors, and because of the current stacking algorithm, may result in an inconsistent quality cut.

Other concerns expressed that, "The current process is too bureaucratic and needs to be simplified. Because the system was being used to cut, re-up approvals in many overmanned ratings dropped to 30 percent and the system was sending home good Sailors who the Navy ultimately could have used, including nearly 3,000 Sailors through two enlisted retentionboards."

The use of the Spread EPA model to determine PTS quotas and Enlisted Retention Board quotas has resulted in an increase of gapped billets at sea. Therefore, it is very important not to put more Sailors out of the Navy than necessary and create unnecessary gaps at sea. Based on the audit results, the current Spread EPA model has too many invalid or inaccurate assumptions to support the reductions of personnel in FY 2012 using the PTS and Enlisted Retention Board quotas, and increased the gaps at sea.

Recommendations and Corrective Actions

Our recommendations, summarized management responses, and our comments on the responses follow. The complete text of the management response is in the Appendix.

We recommend that the Office of the Chief of Naval Operations (N13) and the Bureau of Naval Personnel:

Recommendation 2. Revise and improve the Spread Enlisted Programmed Authorizations model to adjust for high attrition years and low attrition years.

Management response to Recommendation 2. Concur. Improvement to the Spread EPA tool by including additional variables as well as the capability to adjust for high and low attrition is desirable. Modification to the tool to ensure it can respond to the frequent and time sensitive demands of force structure configuration and end strength controls will require modifications. Funding for this effort has not been requested due to the development of the Integrated Manpower Agent-Based Computer Tool – Active Component (IMPACT-AC). This decision support tool is intended to deliver a Web-based decision support software application to assist Community Manager (BUPERS-32) and Community Management Metrics and Analytics analysts (BUPERS-34) with the forecasting of future personnel inventories, through the simulation of Sailor career behavior based on accessions, programmed authorizations, and incentives. IMPACT-AC sponsored by the Office of Naval Research, is scheduled for demonstration in May 2014, and then a determination to transition or re-platform will be made.

Naval Audit Service comments on management response to Recommendation 2. Actions planned by management meet the intent of the recommendation. The recommendation is considered open pending completion of agreed-to actions.

Recommendation 3. Evaluate the use of a simulation model. For more informed decisionmaking, consider adding additional variables such as current manning, monetary retention incentives, and economic conditions.

Management response to Recommendation 3. Concur. Development of a simulation model to fully understand the impact of various management options at the unit level within the broader context of the Navy world of work will bring clarity to risk evaluation and improved resource allocation. The development of a broad context simulation model will also enable us to work backward to verify that established requirements are executable and sustainable. The Manpower and Personnel and Training Decision Support System Capable Manpower Technology Gap for POM-17 to develop a broad context simulation model for Navy Manpower,

Personnel, Training and Education (MPT&E) was forwarded by N1 to N84 recommending it for consideration by the Technology Oversight Group (TOG).

This Gap, if approved by the TOG, will be forwarded, in June/July 2014, to the Office of Naval Research for development of Enabling Capabilities (EC). These ECs will be developed over the Fall of 2014 in coordination with the Integrated Product Team (IPT) and Stakeholders and then presented to the IPT in the December/January timeframe. In January, the IPT will forward its recommended ECs to the TOG and in February/March 2015 the TOG will approve those ECs to be started in FY 2017. If approved, it will be 3-4 years for the S&T portion and another 2-3 for Transition (this could overlap with the final year of S&T). Anticipated program period of performance would be FYs 2017-2021/2022.

Naval Audit Service comments on management response to

Recommendation 3. Actions planned by management meet the intent of the recommendation. The recommendation is considered open pending completion of agreed-to actions. Because the target completion date of 3 October 2016 (the beginning of Fiscal Year 2017) is more than one year from the date of publication of this report, we are establishing an interim target date of 31 March 2015, the projected date of approval by the Technology Oversight Group.

We recommend that the Office of the Chief of Naval Operations (N13):

Recommendation 4. Revise the re-enlistment algorithm to place a higher priority on Navy Enlisted Classifications by either:

- a. Categorizing by Navy Enlisted Classifications and then evaluating performance;
or
- b. Establishing a minimum performance level, ranking by Navy Enlisted Classifications, and then ranking by performance when determining which Sailors will be retained or separated.

Management response to Recommendation 4. Concur. Military Personnel Manual (MILPERSMAN) 1440-060, dated 29 June 2006, provided criteria for how Sailors were competitively ranked for opportunity to continue their active duty service. This process was updated via Naval Administrative Message (NAVADMIN) 352/10, dated October 2010. The new algorithm was designed using input from critical stakeholders, including but not limited to the Fleet, Enlisted Management Code (ECM), and policy. The revised process was:

Step 1: Commanding Officers Recommendation for Retention.

Step 2: Paygrade - Highest pay grade stacks to top.

Step 3: Frocked - Sailors selected for advancement but not yet advanced.

Step 4: Evaluations - Average of up to last five Evaluations.

Step 5: Critical Navy Enlisted Classification (NEC) Held - Those with a critical NEC code will be stacked above non-critical/No NEC Sailors.

Step 6: Number of physical fitness assessment failures in last four years

Step 7: Proximity to Time remaining to Soft End Active Obligated Service (SEAOS)/Decision Point.

Step 8: ECM Final Review - ECM review for content and accuracy after the “Rack and Stack” process to ensure that the “Right Sailor” secures a quota.

The algorithm used a step-by-step process to rank Sailors to determine quota eligibility. Sailors that are “stacked” higher than their peers are given a quota and are allowed to re-enlist.

Perform to serve has been disestablished via NAVADMIN 149/13. This NAVADMIN introduced the Career Navigator (CNAV) program. As part of the CNAV program, the previous re-enlistment algorithm was further adjusted to concentrate only on rank, performance evaluations and critical NECs, per NAVADMIN 150/13.

Decision to update the current re-enlistment algorithm, incorporating a change to NEC use in the re-enlistment decision will require results of two efforts:

- (1) Fiscal Year (FY) 2014 Analysis of NEC use on Force Management.
- (2) Results of a simulation model which will predict the impact of various management options at the unit level and at the Navy aggregate level.
 - a. FY 2014 Analysis - An evaluation of the current re-enlistment approval algorithm is planned for FY 2014. The effort will concentrate on evaluation of NEC use during enlisted Force Management. The tasks will include: analysis of the re-enlistment algorithm format, process mapping/review of NEC use, and impact analysis of NECs on re-enlistment decisions. Current funding for this work has been requested, but not yet identified.
 - b. Simulation Model - Development of a simulation model to fully understand the impact of various management options at the unit level and at the Navy

aggregate level is required to bring clarity to risk evaluation and improved resource allocation. NEC management will be one of the elements reviewed within the proposed simulation model. The development of this simulation model will also enable us to work backward to verify that established requirements are executable and sustainable.

The Manpower and Personnel and Training Decision Support System Capable Manpower Technology Gap for POM-17 to develop a broad context simulation model for Navy Manpower, Personnel, Training, and Education (MPT&E) was forwarded by N1 to N84 recommending it for consideration by the Technology Oversight Group (TOG).

This Gap, if approved by the TOG, will be forwarded, in June/July, to the Office of Naval Research for development of Enabling Capabilities (EC). These ECs will be developed over the Fall in coordination with the Integrated Process Team (IPT) and Stakeholders and then presented to the IPT in December/January timeframe. In January, the IPT will forward its recommended ECs to the TOG and in February/March 2015 the TOG will approve those ECs to be started in FY-17. If approved, it will be 3-4 years for the Selection and Training (S&T) portion and another 2-3 years for Transition (this could overlap with the final year of S&T). Anticipated program period of performance would be FYs 2017; 2021 and 2022.

Naval Audit Service comments on management response to

Recommendation 4. Our intent was for the algorithm to be revised to place a greater priority on the Navy Enlisted Classification. The actions planned by the command are the steps that they have deemed necessary in order to facilitate that revision. Therefore, they meet the intent of the recommendation. The recommendation is considered open pending completion of agreed-to actions. Because the target completion date of 3 October 2016 (the beginning of Fiscal Year 2017) is more than one year from the date of publication of this report, we are establishing an interim target date of 31 March 2015, the projected date of approval by the Technology Oversight Group.

We recommend that the Bureau of Naval Personnel:

Recommendation 5. Provide additional training to their Community Managers to ensure that they are aware of how the Spread Enlisted Programmed Authorizations model should be used and are using it appropriately to make effective manning decisions.

Management response to Recommendation 5. Concur, action complete. ECMs have been provided standard operating procedures (SOPs) for EPA spreads and are trained prior to the annual EPA re-spread. ECMs are aware of how to use the resulting EPA spread for daily rating management.

Naval Audit Service comments on management response to

Recommendation 5. Actions completed by management met the intent of the recommendation. The recommendation is considered closed as of the date of management's response, 6 May 2014.

Finding 3: Sea/Shore Flow Model

Synopsis

The Navy's sea/shore flow model may not always accurately calculate the correct tour lengths for Navy enlisted ratings to reduce the number of gapped billets at sea in accordance with Navy policy. Additionally, a continuity of operations plan was not in place as per Government Accountability Office and Secretary of the Navy Instruction requirements if the current employee who solely operates the model becomes unavailable. These conditions occurred because the model:

- Contains invalid assumptions that limit accuracy and effectiveness and does not appear to reflect how the Navy actually operates regarding recruiting, promotions, or availability for duty;
- Does not allow for assignment of Sailors with the correct experience levels to be placed in the correct billets when required;
- Lacks sufficient management oversight; and
- Lacks sufficient input controls to ensure model variables are accurately input.

Tour lengths established by use of the model contribute to many ratings at sea being overstaffed by inexperienced Sailors and understaffed at the journeyman and supervisory levels, therefore creating a potential lack of supervision onboard some ships in certain ratings. Additionally, the Navy is still experiencing gaps at sea, especially at the journeyman and supervisory enlisted levels as a result of using the sea/shore flow model. The Navy has no assurance that:

- Erroneous data contained in the model will be identified and corrected;
- The results of the model are based on accurate data; and
- The model could be used in the absence of its current operator.

Discussion of Details

Background

The sea/shore flow model, which was enacted in 2008, is a tool the Navy uses to define and manage enlisted sea and shore tour lengths. In 2008, it replaced the Navy's previous policy of Sea Shore Rotation. The Sea Shore Rotation was a rotation policy that based a Sailors' sea tour length on a ratio of sea billets to shore billets for each particular rating and pay grade. The Sea Shore Rotation billet ratio metric lacked the fidelity needed to manage a sea-centric force. The Navy decided to transition to the sea/shore flow model

because they believed it provided optimal sea tour lengths due to a reduced shore billet structure (fewer Sailor billets) caused by fiscal constraints.

The previous Sea Shore Rotation tour lengths policy set sea tour lengths based on a Sailor's pay grade. In 2008, the sea/shore flow model was introduced as a fundamental change in the way the Navy defined and managed enlisted sea tour lengths. The Navy uses NAVADMIN messages to communicate new sea and shore tour lengths for various ratings sea shore flows to the entire Navy. Overall, since 2008, the Navy has increased the number of sea billets and decreased the number of shore billets. According to a July 2011 NAVADMIN 201/11, in order to improve manning levels at sea, 36 enlisted communities will have longer sea tour lengths; the remaining 48 ratings either will have no change or a decrease to sea tour lengths; and 18 enlisted communities will become sea-intensive (i.e., assigned maximum sea tour lengths allowed by policy). Sailors in sea-intensive communities can expect to spend more than half their career on sea duty assignment.

Pertinent Guidance

NAVADMIN 361/12, "Sea/Shore Flow Enlisted Career Paths Updates," dated December 2012, provides a comprehensive tour length update for most enlisted communities. It reflects the increasingly sea-centric nature of naval service by having Sailors spend more than half of their career on sea duty. It was also developed to create a balance of the sea shore flow that will result in: improved fleet readiness, higher fleet manning levels, increased geographic stability, enhanced rating experience levels, greater advancement opportunities, and reduced distributable inventory friction. It identifies the maximum sea and minimum shore tour lengths for Sailors in sea-intensive ratings. It states that the sea tour lengths for sea-intensive communities will not involuntarily exceed 60 months for Sailors with less than 20 years of service, and 48 months for Sailors with more than 20 years of service. It also states that the shore tour lengths between sea tours will be set to 36-months long.

Secretary of the Navy Instruction 5200.35E "Department of the Navy Managers' Internal Control Program," dated 8 November 2006, establishes requirements for separation of duties. Paragraph 6.i.(1), requires that Navy activities comply with Government Accountability Office (GAO) "Standards for Internal Control for the Federal Government" (GAO/AIMD-00-21.3.1), dated November 1999. The GAO Internal Control Standards "Segregation of Duties" paragraph states that key duties and responsibilities need to be divided or segregated among different people to reduce the risk of error or fraud. This should include separating the responsibilities for authorizing transactions, processing and recording them, reviewing the transactions and handling any related assets. No one individual should control all key aspects of a transaction or event.

Audit Results

The Navy's sea/shore flow model may not always accurately calculate the correct tour lengths for Navy enlisted ratings to reduce the number of gapped billets at sea. Additionally, a continuity of operations plan was not in place if the current employee who solely operates the model becomes unavailable. These conditions occurred because the model:

- Contains invalid assumptions that limit accuracy and effectiveness and does not appear to reflect how the Navy actually operates regarding recruiting, promotions, or availability for duty;
- Does not allow for assignment of Sailors with the correct experience levels to be placed in the correct billets when required;
- Lacks sufficient management oversight; and
- Lacks sufficient input controls to ensure model variables are accurately input.

Model Effectiveness

The Navy's sea/shore flow model may not always predict the correct tour lengths to reduce or prevent gapped billets at sea. We obtained a copy of the model from CNO N12 in order to evaluate the effectiveness of the model and its controls. We analyzed the formulas used in the spreadsheet, the data entered into the model, and the assumptions contained in the model to determine how the model calculated tour lengths. Using the model, we analyzed the enlisted ratings that, according to the Commander, Naval Surface Forces Atlantic (SURFLANT), had gaps at sea. Those enlisted ratings included Gas Turbine Systems Technician (GS, GSE, GSM), Quartermaster (QM), Aviation Boatswain's Mate (ABF/ABH), Sonar Technician (STG), Operations Specialist (OS), and Gunner's Mate (GM).

We also reviewed NAVADMIN 361/12, "Sea/Shore Flow Enlisted Career Paths Updates," which states that sea and shore tour lengths are to be maximized for Sailors in sea-intensive ratings to create a balance of the sea shore flow. Additionally, we interviewed key personnel from CNO, Military Personnel Plans and Policy (N13) and Total Force Requirements Division (N12), Bureau of Naval Personnel (BUPERS), Commander, Naval Surface Forces, Atlantic (SURFLANT), and Commander, Naval Surface Forces, Pacific (SURFPAC) to gather additional information pertaining to gapped billets and the sea/shore flow model.

We found that policy constraints for maximum sea tour lengths and minimum shore tour lengths have been followed in the use of the sea/shore flow model. We also found that the model has been used since 2008 and the Navy is still experiencing gaps at sea,

especially at the Journeyman and Supervisory enlisted levels (see Finding 1). However, the invalid assumptions used by the Sea Shore Model are one reason the model has not been as effective at eliminating gaps at sea. Also, the sea/shore flow model is designed as primarily a fill model with fit as a secondary objective function. This may result in enough Sailors at sea in total quantity but still results in too few Journeyman and Supervisor Sailors at sea.

Model Assumptions

The sea/shore flow model contains assumptions that do not appear to reflect how the Navy actually operates. According to the CNO employee who is responsible for administering and operating the model, the assumptions used by the model were based off of the desired end-state of the manpower and personnel system. Those assumptions include:

- Inventory of personnel will match Enlisted Programmed Authorizations;
- Continuation rates and gain distributions will match goals set by Enlisted Community Managers;
- Distribution system will not deviate from tour length policy;
- Every service member in a year group is promoted at the same rate;
- Limited duty and pregnancy rates will continue at historic levels; and
- Sailors will not be assigned in excess on any unit or activity.

To validate that the above assumptions were used by the model and confirm how the model works, we reviewed each cell contained in the model. For cells that contained a mathematical formula, we determined the accuracy of the formula used. For cells that contained inputted data, we traced the data entered in those cells back to the source documents showing the origin of the input. For a discussion of the specific data inputs used in the model see Exhibit A.

Based upon our review, we confirmed that the assumptions discussed above were used by the model. However, our review also determined that those assumptions were not always valid.

Inventory of personnel. Our review of the model confirmed that it assumes that the inventory of personnel will match the enlisted programmed authorizations. This appears to be a valid assumption that the model should have.

Continuation Rates and Gain Distributions. The model also contained the assumption that continuation rates and gain distributions will match goals set by Enlisted Community Managers. The model uses the continuation rates, gain rates, and the total number of authorizations in a rating to calculate a billet spread. The billet spread estimates how

many Sailors are in each length of service year group for 30 years. This is similar to what the Spread EPA model does and, as discussed in Finding 2, contains the same invalid assumptions of the Spread EPA model. These assumptions are that the continuation and gain rates will be in a steady state for 30 years, the Navy needs to manage manpower by year group, and manning actions are not included in the continuation rates. These assumptions appear invalid in that the billet spread is used instead of actual numbers from the Enlisted Personnel System of Sailors currently in the Navy. The billet spread does not match the actual numbers, and the actual numbers are not included in the model at any time.

Year Group. The model also assumes that during each month of a year group¹⁷ the same number of Sailors enlisted in the Navy and each member in a year group is promoted at the same rate. The model does this by breaking up each year group into months by dividing the year group in the billet spread by 12. The assumption that the same numbers of Sailors enlist each month throughout the year does not appear to be valid based upon conversations with the Navy Education and Training Command activities. Navy Education and Training Command personnel stated that they have to schedule training to match arrivals at the recruit training center. Some months no recruits arrive for a rating and other months a large number of recruits arrive for a rating. Additionally, the assumption that every service member in a specific year group is promoted at the same rate is also not a valid assumption made by the model. In other words, the model assumes that all E-4s will be promoted to E-5s one after another until all have been promoted starting at a specific length of time. It also makes the same assumption for all of the E-5s being promoted to E-6. In reality, a year group can have members with up to 3 different grade levels or ranks. The sea/shore flow model does not account for this, thus limiting predictive capabilities.

Distribution System. The user of the model is able to change the lengths of the number of months in the Initial Augmentation (boot camp and “A” school), sea tours, shore tours, and leave, transit, and training. The model uses this input to determine how many of the Sailors will be on sea duty or shore duty. This number of Sailors is then compared to the amount of EPA (adjusted for taxes and excursions) required for that fiscal year.

Our analysis confirmed that the model assumes the distribution system will not deviate from tour length policy. However, this assumption does not appear to be completely valid. For example, the lengths of sea and shore tours have changed several times during the last 30 years, which is the base period the model uses for calculations. Therefore, some senior level Sailors may not be at the point in their career path where the model projects they should be. Also, those Sailors that performed back-to-back sea tours, or those with tours that have been extended for various reasons, may be in a different place in their career than where the model projects they will be. Additionally, limited duty

¹⁷ A year group is the group of people who joined the Navy in the same year.

assignments and pregnancies during a Sailor's career may alter the length of a sea tour assignment and place a Sailor in a different point in their career path than where the model projects they will be. Therefore, unless the model is based upon actual Sailors on sea or shore duty, the results of the model will not be completely accurate or effective.

Limited Duty, Pregnancies, and Excess Assignments. The assumption that limited duty and pregnancy rates will continue at historic levels is also contained within the model; however, we did not test the validity of this assumption during our audit. Additionally, we did not confirm the assumption that Sailors will not be assigned in excess on any unit or activity, or whether that information was contained in the model.

Correct Experience Levels

The sea/shore flow model does not provide Sailors with the correct experience levels to the correct billets when required. Our analysis of the model concluded that the model was a fill model and not a fit model. This was also confirmed by the CNO employee who maintained and operated the model. Specifically, the employee stated that it was a fill model that assigned the correct number of Sailors to sea duty. However, the employee noted that it was not a fit model because it did not always assign Sailors with the correct grade level (rank) to sea duty. It was noted that the goal of the model is to have the fewest fill gaps in a rate (the correct number of Sailors in a rate at sea and shore) and the model also allows the user to see the model's fit metrics that results from the fill solution. The CNO employee stated that the fit section of the model assumed that every Sailor was promoted at the same interval when determining the rate the Sailor would be at after a specified amount of time in the service. The employee also acknowledged that assumption was not consistent with how promotions occur in the Navy. Instead, the promotions occur to ensure that the Navy has the correct number of service members at each grade level to fill vacancies that exist. Also, because service members are promoted based upon the results of test scores and review boards, not all members will be promoted at the same predicted rate.

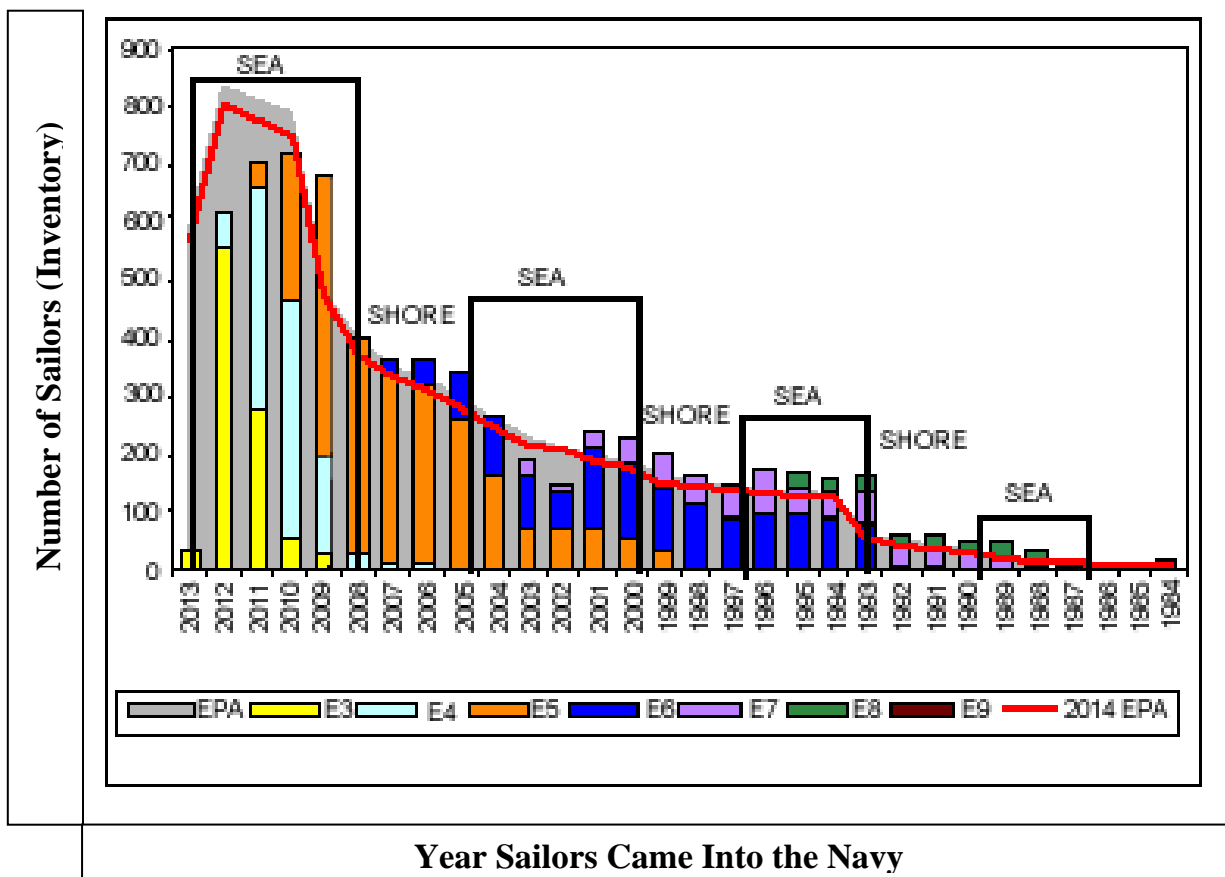
Our analysis also showed that the model tends to achieve fill by extending the first sea tour of each sea-centric¹⁸ rate in the Navy. The effect of extending the first tour of a particular rate is that the correct number of service members is achieved by having more junior Sailors at sea for a longer period of time. The Navy is currently in the process of extending initial enlistments to match the first sea tour in each rate (the T + X program, see Finding 1). This will result in more junior Sailors essentially remaining at sea for their entire first enlistment and ensure that the sea/shore flow model has the correct fill.

The Wave-Like Behavior of the Model. The sea shore flow has a wave-like motion as enlisted members move through their career. At the beginning of each Sailor's career

¹⁸ Sea Centric means the rating whose Sea/Shore Flow career path results in at least 180 months (15 years) but less than 216 months (18 years) at sea over a 30-year time horizon.

after attending boot camp, “A” school, and possibly “C” schools, they are sent to sea. After that, at some point in their careers, they are sent to shore duty for 3 years. This can create gaps at sea for certain grade levels. For example, the billets authorized for the Operations Specialist rating in January 2013 required a total of 2,002 E-5 Sailors (Operations Specialists 2) to be at sea, and a total of 801 Operations Specialists 2 to be on shore. However, the requirement for 71.4 percent (2,002/2,803) of them to be assigned to sea duty cannot be met because the sea shore flow sends too many Operations Specialists 2 back to shore duty at the end of their respective sea tours. Figure 6 provides an illustration of the Spread EPA Model with the sea/shore flow for the Operations Specialist rating.

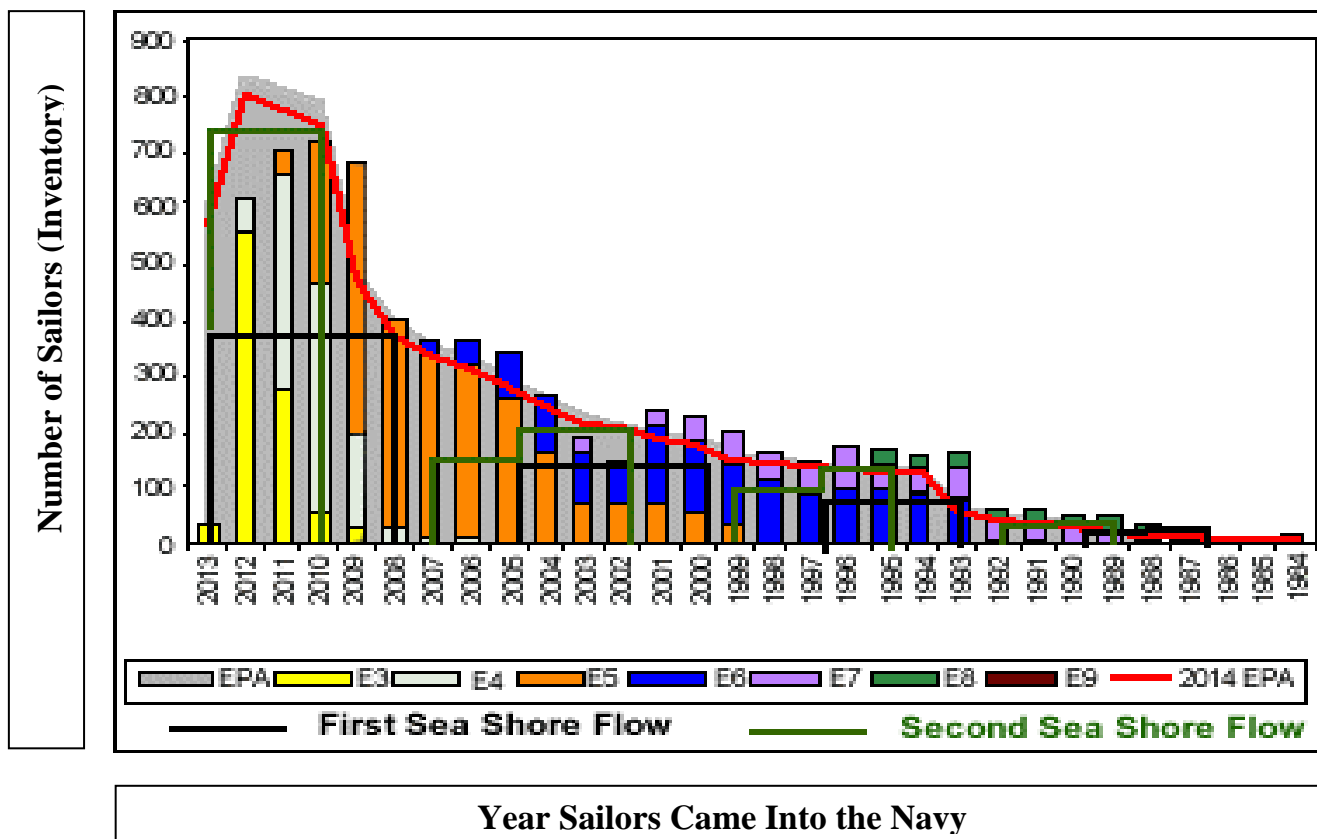
Figure 6 - Spread EPA Model with the Sea/Shore Flow for Operations Specialist



This wave-like behavior could potentially be mitigated if, instead of one wave, the model had two waves (see Figure 7). For example, one of those waves would consist of Sailors who rotate from sea duty to shore duty after a standard 5-year sea tour. The other wave would represent Sailors who rotate from sea duty to shore duty after completing 3 years of sea duty. The sea tours could also be aligned with different enlistment lengths. By using offsetting first sea tour lengths, the wave effect would be reduced because there would only be one year group instead of three year groups where all of the Sailors would

be on their first shore tour.¹⁹ Also, all of the Sailors in a rating would be on their first shore duty. This would be especially helpful for ratings such as Operations Specialist.

Figure 7 - Spread EPA Model with the Sea/Shore Flow for Operations Specialist (showing 2 waves)



Model Fit Metrics and Fill Metrics. We reviewed the fit and fill metrics for specific gapped ratings within the sea/shore flow model. We also visited ships, received input from senior level management, and interviewed the Chief of Naval Operations employee who maintains the model. According to the fill requirements (the number of Sailors) contained in the model, it appears that the number of Sailors needed to meet the fill requirements for FY 2015, using the rotations contained in the version of NAVADMIN 361/12, is available. However, because the model does not use actual onboard Sailor information to calculate these numbers, the actual results could vary greatly. Table 7 provides an explanation of the sea shore flow fill metrics for FY 2015 by rating.

¹⁹ Sailors with a 3-year first sea tour would be on shore duty in part of their 4th, 5th, 6th, and most of their 7th year of service, or year group. They would be back at sea in their 8th year of service. The only shore duty that is the same as the model in Figure 7 above is end of the 6th year and most of the 7th year, or approximately 1 year. Therefore, only one year group would be on shore duty verses the 3 year groups shown in Figure 6.

Table 7 – Sea/Shore Flow Metrics for Fiscal Year 2015 by Rating

Sea/Shore Flow Fill Metrics FY 2015			
Sea Tour	Sailors	Billets	Total Fill
ABF	1,686	1,669	101%
ABH	3,828	3,746	102%
GSE	837	793	106%
GSM	1,836	1,828	100%
GM	2,722	2,677	102%
STG	1,823	1,702	107%
OS	4,567	4,375	104%
QM	1,472	1,442	102%

Total Fill = Sailors at Sea/Sea Duty Billets

The U.S. Fleet Forces Command determined that its fit requirement (the right Sailors based on experience levels) is met if at least 85 percent of the billets authorized are filled with inventory for a particular rating. We found that the ratings audited, in some cases, showed that the fit requirements were not always met. This means that Sailors on sea duty did not always have the right levels of experience needed. We also found that the fit metrics from the model indicated that the 1st sea tour was over-manned for all of the ratings we analyzed. The model indicated that the 2nd sea tour was under-manned for all of the ratings analyzed. Further, the model indicated that the Chief Petty Officer (CPO) sea tour was over-manned for six of the eight ratings analyzed. Table 8 provides an explanation of the sea/shore flow fit metrics for FY 2015 by rating.

Table 8 – Sea/Shore Flow Metrics for Fiscal Year 2015 by Rating

Sea/Shore Flow Fit Metrics For Fiscal Year 2015			
	Sailors	Billets	Fit
Sea Tour-ABF			
CPO FIT	97	83	117%
Sea 2 FIT	214	326	66%
Sea 1 FIT	1,375	1,260	109%
Sea Tour-ABH			
CPO FIT	246	176	140%
Sea 2 FIT	484	603	80%
Sea 1 FIT	3,098	2,967	104%
Sea Tour-GSE			
CPO FIT	50	97	52%
Sea 2 FIT	135	242	56%
Sea 1 FIT	652	416	157%
Sea Tour-GSM			
CPO FIT	164	96	171%
Sea 2 FIT	414	590	70%
Sea 1 FIT	1,258	1,020	123%
Sea Tour-GM			
CPO FIT	344	261	132%
Sea 2 FIT	558	1,275	44%
Sea 1 FIT	1,820	1,034	176%
Sea Tour-STG			
CPO FIT	202	130	155%
Sea 2 FIT	356	792	45%
Sea 1 FIT	1,265	684	185%
Sea Tour-OS			
CPO FIT	405	322	126%
Sea 2 FIT	994	2,313	43%
Sea 1 FIT	3,168	1,534	207%
Sea Tour-QM			
CPO FIT	147	170	86%
Sea 2 FIT	281	434	65%
Sea 1 FIT	1,044	772	135%

CPO FIT = Sailors on Third or Fourth Sea Tour / (E7 + E8 + E9 Sea Duty Billets)

Sea 2 FIT = Sailors on Second Sea Tour / (E5 + E6 Sea Duty Billets)

Sea 1 FIT = Sailors on First Sea Tour / (E3 + E4 Sea Duty Billets)

We determined that the model assumes that everyone on the 3rd and 4th sea tours are CPOs. Sea Tour 3 is assumed by the model to start in the 18th year of a Sailor's career. However, this assumption is not always valid because there are some E-6s or Operations Specialists 1 that have 18 or 19 years of service that would be filling the E-6 billets authorized. The model also assumes that everyone on the 2nd sea tour is an E-5 or E-6. Additionally, it assumes that the 2nd sea tour begins near the end of the 9th year of a Sailor's career and ends near the end of their 14th year. However, this assumption is not necessarily correct because some Sailors are promoted to E-7 or CPO during their second sea tour, and are filling CPO authorized billets. Further, the model assumes that everyone on their first sea tour is either an E-3 or E-4. Sea Tour 1 is assumed by the model to start near the end of the 1st year of a Sailor's career and end near the end of their 6th year. However, the assumption is not always valid because many Sailors are promoted to E-5 on their first sea tour and are filling E-5 authorized billets.

We also noted that the model has additional metrics for E-5 and E-6 Sailors that have different assumptions than the above metrics. For example, for the Operational Specialist rating, the model assumes that the over-manning of the sea CPO fit are really E-6 Sailors on their third tour, filling CPO billets that the model had placed on the third sea tour when calculating the CPO fit. The model then calculates that the Operational Specialist E-6 Sailors are over-manning the E-6 billets at sea. The model also assumes that the over-manning of the Sea Tour 1 fit are really E-5 Sailors on their first tour, filling E-5 billets that the model had placed on the second sea tour when calculating the Sea Tour 1 fit. The Operational Specialist E-5 Sailors on their 2nd sea tour represent 3 percent of the Operational Specialist E-5 Sailors at sea. These Operational Specialist E-5 Sailors represent 97 percent of the Operational Specialist E-5 Sailors at sea.

The model uses only the EPA and the continuation and gain distribution rates to determine the fit metrics. Actual onboard Sailor information is not used in the fit metrics as a starting point for any of the calculations. The CPO, Sea 2, and Sea 1 fit use assumptions about which Sailors are on what sea tour based totally on grade level from E-1 to E-9. The E-6 and E-5 fit on second sea tour, and the E-5 fit on the first sea tour then concludes that the assumptions of the CPO, Sea 2, and Sea 1 fit are wrong and the new set of fit metrics determine how much they are wrong. Therefore, based on the conclusions above, we determined that the fit metrics of the model above have very limited usefulness.

Modeling and Simulation. The Navy budget process produces information that should be included in any model used to determine community health and project needed accessions. The budget process determines total end-strength for the Navy and each rating for the current and future years, and determines the number of Sailors in each grade level for the Navy and each rating for the current and future years. The current inventory of Sailors provides the starting point for any model or simulation and contains the needed information of how many Sailors are at each grade level Navy-wide and in

each rating, and also contains the information of how long each Sailor has left on their enlistment.

Integrated Manpower Agent-Based Computer Tool - Active Component (IMPACT-AC) is an example of a modeling and simulation model. This audit is not endorsing this model because the scope did not include a review of it. IMPACT-AC is being developed for Bureau of Naval Personnel (BUPERS-3) personnel. It is a suite of discrete-event simulations that are designed to project future inventories of enlisted and officer communities. This projection is achieved by modeling the processes of accessions/gains, losses, advancements/promotions, and laterals for each Sailor or officer in the active Navy. Over time, the individual Sailors and officers make different decisions based on their personal characteristics. Some of these decisions are probabilistic, meaning the outcome is determined by a stochastic process; others are deterministic, meaning the outcome is known for certain. For example, there is some likelihood that an officer will be promoted from O-5 to O-6 based on his or her personal profile. In contrast, it is known for certain that all officers with 4 years of service who remain on active duty will have 5 in the next year. The ability to model individual Sailors and officers with probabilistic and deterministic events gives IMPACT-AC the ability to make decisions on a more granular level than many other models used to support community management.

In other words, a modeling and simulation tool can model the future behavior of every Sailor by creating an instance object²⁰ for each Sailor currently in the Navy and modeling their behavior for future years. The model can also create an instance object of Sailors not yet in the Navy and model their behavior. With a simulation model the Navy could evaluate the effects of Navy initiatives such as re-enlistment bonuses or PTS on these Sailor objects. The modeling of the many factors that affect Navy manpower will help the Navy make more informed decisions.

Littoral Combat Ships. The fact that the sea/shore flow model achieves the fill numbers by extending the first sea tour for sea intensive ratings could present a problem with the littoral combat ship. Based upon our analysis of activity manning documents, we determined that apprentice-level Sailors represented only 8.7 percent of the total littoral combat ship program. The remaining 91.3 percent of the crew was to be comprised of E-5 through E-9 Sailors. The crew size of 75 Sailors for a littoral combat ship is smaller than the size of the crew for other ships within the Fleet and requires Sailors to be experienced and have special training. However, the manning for these ships could potentially present the Navy with a problem as more of these ships enter service because the sea/shore flow model is relying on longer first sea tour apprentice Sailors (E-1 through E-4) to achieve the proper fill for many ratings.

²⁰ Object oriented programming languages create programmed code called an object that can be used repeatedly in a program. An instance object is when a program uses an object in a program.

Management and Oversight of the Sea/Shore Flow Model

We identified opportunities for improvement in the management and oversight of the model. Based on interviews with key personnel at CNO N12, we determined that the model is operated and maintained by one individual. As a result, that individual manages the inputs and changes to the model. We were informed that the model is updated manually every 6 months with data from multiple sources including: CNO (N120), Bureau of Naval Personnel (BUPERS-32), Navy Personnel Command (NAVPERS-40), U. S. Fleet Forces Command, and Center for Naval Analysis. Every 6 months, representatives from each of the major stakeholders conduct a review to determine if any changes are needed based upon changes in the enlisted communities. Once those changes are determined, the CNO employee manually updates the model to incorporate the changes. Because the model is a Microsoft Excel spreadsheet, it is our opinion that it does not allow for input controls nor does it have automated controls. As a result, it may be incapable of detecting if the data entered into it during updates contains errors. According to personnel from CNO N122B, the model is updated with the new Spread EPA and billet file every 6 months. It is updated with new continuation rates and gain distributions, limited duty, and pregnancy data annually. Personnel from CNO N122B contend that because the model is a Microsoft Excel spreadsheet, it does allow for input controls, automated controls, and maximizes the user base.

We were told that another person from CNO is responsible for reviewing the model after any changes have been made to make sure it is accurate.

We also determined that a continuity of operations plan for operating the model has not been established in the event the employee who currently operates it is not available. We were told that there are a few personnel who could possibly serve as a backup to that employee, such as the Enlisted Community Managers or another individual within CNO, if needed. It was also noted that no one possessed the comprehensive knowledge of the model or interacted with the model as the individual who currently controls the functions and capabilities of it does. The absence of a sufficiently trained backup or a succession plan for operating the model puts the Navy at risk of having a sea/shore flow model that cannot effectively be used or managed in the event of crisis.

Recommendations and Corrective Actions

Our recommendations, summarized management responses, and our comments on the responses are as follows. The complete text of the management response is in the Appendix.

We recommend that the Office of the Chief of Naval Operations (N1):

Recommendation 6. Create a fit model rather than a fill model and analyze the sea shore flow policy constraints to create an optimal balance between sea and shore duty that will ensure the sea shore flow results in fit to billet requirements at sea.

Management response to Recommendation 6. Concur, action complete. The Sea Shore Flow Model (SSFM) has been modified to solve for maximum attainable fit. The newly developed optimization subroutine iterates through every possible tour length combination to determine the best fit possible for each rating, given the underlying billet structure and ECM projected continuation rates and gain distributions. However, the fidelity of the SSFM remains limited to rating and month vice rating, paygrade, and month. As such, the fit metric contained in the optimization subroutine uses the Length of Service (LOS) as a proxy for paygrade seniority (i.e., most junior Sailor in terms of LOS is also most junior Sailor in terms of paygrade). Until the development of a stochastic manning simulation model as described in Recommendation 7 below, the Enlisted Sea Shore Flow Career Path modeling capacity and capabilities within the Deputy Chief of Naval Operations (DCNO) (N1) remain limited to the Excel based, deterministic SSFM. That said, improvements to the SSFM are made as new manning insights are identified (e.g., inclusion of Inventory Friction as an input parameter); in response to senior leadership guidance (e.g., development of persistence subroutine to maximize stability); in response to major stake holder inquiries (e.g., impact of setting sea and shore tours outside policy constraints); or to facilitate assessment of various force structure proposal.

Naval Audit Service comments on management response to

Recommendation 6. Actions taken by management meet the intent of the recommendation. The recommendation is considered closed as of the date of management's response, 6 May 2014.

Recommendation 7. Take action to determine the feasibility of developing or procuring a modeling and simulation model that will simulate real-world processes. The simulation should be able to reduce inaccurate assumptions that are currently being factored into the sea/shore flow model. The model should also consider multiple first tour lengths for sea-intensive ratings.

Management response to Recommendation 7. Concur, action under review. Given the limited resources available for the development and procurement of modeling capabilities within DCNO (N1), a strategy is being developed to leverage off of one of two modeling efforts currently underway. The Integrated Manpower Agent-Based Computer Tool – Active Component and New Strength models will both provide a more accurate projection of future inventory of personnel at the rating and paygrade level (i.e., more accurate as compared to the Spread EPA and Current Strength models). Ostensibly, both will do the same thing but use slightly different approaches. An accurate projection of future inventory at the rating and paygrade level is the first step in developing a manning simulation model. The second step is to develop an algorithm to distribute that future inventory of personnel to the future billet demand. The Plan of Action and Milestones is provided in the management response letter, with an estimated completion date of November 2018.

Naval Audit Service comments on management response to Recommendation 7. Actions planned by management meet the intent of the recommendation. The recommendation is considered open pending completion of agreed-to actions. Because the target completion date of 30 November 2018 is more than one year from the date of publication of this report, we are establishing an interim target date of 28 November 2014, the projected date of determining if a module could be added to one of the models that would have the capability required to meet the intent of the recommendation.

Recommendation 8. Provide additional management and oversight of the sea/shore flow model. At a minimum, this should include the development of written data input tests, requirements for documenting the tests, procedures to ensure that those who test the model are separate from those who update the model, and the establishment of a contingency plan for operating the model if the current operator is unavailable.

Management response to Recommendation 8. Concur, action in work. Documentation for updating, maintaining, and testing the SSFM is under development, expected completion date is July 2014. Second civilian Operations Research Analyst has been hired to provide redundancy and additional oversight. Center for Navy Analysis (CNA) review of SSFM efficacy is underway. CNA review is focusing on determining the time delay between promulgating tour length policy changes (i.e., release of Sea Shore Flow Enlisted Career Path Naval Administrative Message) and manifestation of expected manning changes in the Fleet. Expected completion date is September 2014. While not a formal verification and validation process, the CNA review will be helpful in determining any weaknesses in the SSFM and refining the process for determining and assigning sea and shore tour lengths.

Naval Audit Service comments on management response to

Recommendation 8. Actions planned by management meet the intent of the recommendation. The recommendation is considered open pending completion of agreed-to actions. The target completion date is 31 July 2014, the date when the documentation for the sea/shore flow model will be completed.

Finding 4: Training Assignments for Enlisted Sailors

Synopsis

The assignment of enlisted Sailors to training is extending shore duty tours beyond the required minimum of 36 months and contributing to critical gapped billets at sea. According to Naval Military Personnel Manual (MILPERSMAN), Article 1306-104, Section 6, detailers may issue orders directing a transfer up to 3 months prior to Projected Rotation Date and up to 4 months after Projected Rotation Date is established. We statistically sampled 192 Sailors that had consecutive shore duty assignments and determined that 63 Sailors attended training/school prior to their shore duty tour and 49 Sailors attended training/school before their sea duty tour. Of the statistically sampled 192 Sailors that had consecutive shore duty assignments, we also determined that 65 Sailors who attended training prior to their shore or prior to their sea duty tour could have transferred to their next sea or shore assignment early, saving a total of 3,017 shore duty training days among them.

This occurred because the period of time designated for training was not included in the Sailors' shore rotation time period. It also occurred because:

- Senior management in the Navy considered training a category other than sea or shore duty; and
- Although the guidance states that a detailer may direct a transfer, there was no requirement to do so.

As a result of not transferring Sailors early, there were a significant number of gapped billets at sea.

Discussion of Details

Background

Naval Education and Training Command Roles and Responsibility. Naval Education and Training Command (NETC) executes the Navy Enlisted Supply Chain production role by training Sailors for Fleet customers from initial accession Recruit Training, follow-on initial apprentice skills training ("A" school), to advanced skills ("C" school) training. Working closely with the Production Management Office, Bureau of Naval Personnel, U. S. Fleet Forces Command (N1), Naval Recruiting Command, and Navy Personnel Command (NAVPERS 40), NETC manages each rating and NEC course of instruction in accordance with the Fleet and governing instructions.

NETC informed us that they do not tell the Fleet when Sailors will be sent to “C” school training, which can take place at various times throughout an individual’s career. According to NETC personnel, NAVPERS and the Sailor’s unit or command, make the determination of when “C” school training takes place.

Role of Enlisted Community Managers. Enlisted Community Managers fall under Bureau of Naval Personnel (BUPERS 3) responsibility. Their role is to review and analyze gain and continuation rates to manage force structure, and compare to future Enlisted Programmed Authorizations (EPAs), to determine initial skills training requirements at the rating and NEC levels for future fiscal years. EPA is the demand signal and/or metric Community Managers use to shape the current force (through advancement, retention, and loss), train the current force (through “A” and “C” school Fleet returnees), and fill the future force needs (through recruitment and training of new Sailors). Although Enlisted Community Managers establish “A” and “C” school requirements, they do not determine when Sailors get training. According to BUPERS personnel, detailers and Fleet personnel make the determination when Sailors get “C” school training.

Per BUPERS personnel, detailers use the following criteria when scheduling training for Sailors:

- There must be an NEC authorized for the training requested at the ultimate duty station that is not filled or is projected to be vacant;
- There must be a school seat available within a reasonable amount of time of the Sailor’s reporting date if being ordered to an NEC specific requirement;
- The Sailor must meet prerequisites before assignment; and
- The Sailor must be eligible in all respects and willing to obligate service if necessary.

According to detailers at Navy Personnel Command, most “C” school quotas are utilized to fill NEC requirements of a command’s billet file. If there is a valid requirement for a new NEC, and if a school seat is open in the proper transfer window, then a “C” school will be considered in route to the next command.

Pertinent Guidance

Naval MILPERSMAN, Article 1306-100, Section 3.a.(3)(b), “Enlisted Distribution Management System,” Change 33, dated 30 November 2010, provides that a Sailor become available to the assignment control authority for detailing purposes 9 months prior to the Sailor’s projected rotation date. However, the assignment control authority cannot move them more than 3 months early or 4 months late without manning control authority concurrence.

Naval MILPERSMAN, Article 1306-104, Section 6, “Projected Rotation Date,” Change 19, dated 27 April 2007, provides that detailers may issue orders directing a transfer up to 3 months prior to projected rotation date and up to 4 months after projected rotation date is established. This 7-month projected rotation date detailing window provides flexibility for an individual to negotiate orders and the detailer to accommodate duty preferences while meeting enroute-training requirements. It also provides a larger pool of members to match to requirements, improving Fleet readiness by reducing billet gaps of key positions at sea, and correcting sea/shore imbalances in some ratings.

Naval MILPERSMAN, Article 1306-606, Section 1.b (a) & (b), “Quota Types and Procurement,” Change 19, dated 27 April 2007, provides that members assigned quotas to course(s) of instruction of less than 20 weeks duration in connection with a permanent change of station, are assigned to their ultimate permanent duty station in one of two ways through transfer directives that:

- Indicate the ultimate duty station will be assigned upon completion of school; or
- Include a permanent duty station.

Naval MILPERSMAN, Article 1306-102, Section 1, “Type Duty Assignment Codes,” Change 19, dated 27 April 2007, provides that there are five types of duty designations, or “types,” used to identify commands for establishment of sea/shore rotation.

Audit Results

The assignment of enlisted Sailors to training is extending shore duty tours beyond the required minimum of 36 months, and contributing to gapped billets at sea. According to Naval Military Personnel Manual, Article 1306-104, Section 6, detailers may issue orders directing a transfer up to 3 months prior to Projected Rotation Date and up to 4 months after Projected Rotation Date is established. We statistically sampled 192 Sailors who had consecutive shore duty assignments and determined that 63 Sailors attended training/school prior to their shore duty tour, and 49 Sailors attended training/school before their sea duty tour. Of the statistically sampled 192 Sailors that had consecutive shore duty assignments, we also determined that 65 Sailors who attended training prior to their shore or prior to their sea duty tour, could have transferred to their next sea or shore assignment early, saving a total of 3,017 shore duty training days among them.

This occurred because the period of time designated for training was not included in the Sailors’ shore rotation time period. It also occurred because:

- Senior management in the Navy considered training a category other than sea or shore duty; and
- Although the guidance states that a detailer may direct a transfer, there was no requirement to do so.

As a result of longer shore duty tours, gapped billets at sea could significantly increase.

Analysis of Training Assignments for Selected Enlisted Ratings

To determine the impact of training on Sailors' sea and shore duty tours and whether it contributed to gapped billets, we interviewed personnel at CNO, BUPERS, Navy Personnel Command, several surface ships, and training commands that report to the NETC. We also statistically sampled 192 Sailors who were assigned to consecutive shore duty assignments to determine whether this contributed to gapped billets. The scope and universe of that sample are described in more detail in Finding 5 of this report. For the 192 sampled Sailors, we compared shore duty assignments to shore duty Unit Identification Codes. Based upon our review, we found that 63 Sailors attended training/school prior to their shore duty tour, and 49 Sailors attended training/school before their sea duty tour. The remaining 80 Sailors did not attend training prior to their shore duty or before their sea duty tour. The selected ratings reviewed were:

- Aviation Boatswain's Mate (ABM);
- Aviation Boatswain's Mate-Fuels (ABF);
- Aviation Boatswain's Mate-Aircraft Handling (ABH);
- Gas Turbine Systems Technician (GS);
- Gas Turbine Systems Technician-Electrical (GSE);
- Gas Turbine Systems Technician-Mechanical (GSM);
- Quartermaster (QM);
- Sonar Technician-Surface (STG);
- Operations Specialist (OS); and
- Gunner's Mate (GM).

Training Before Shore Duty. Based on our review, we determined that out of the 192 statistically sampled Sailors assigned to back-to-back shore Unit Identification Codes, 63 Sailors attended training/school before their shore duty tour. By statistically projecting our results, we estimated that 3,944 Sailors, or 35 percent, attended school before shore duty, out of the 11,303 instances of consecutive shore duty assignments. Additionally, we determined that out of the 63 samples where Sailors attended school

prior to shore duty, 42 Sailors could have been assigned and had their shore assignment curtailed, avoiding 1,679 shore tour (training) days, but were not. Shore duty could not be curtailed for 13 samples because the Sailor separated from the Navy or there was a spouse co-location or medical issue. Shore duty was curtailed 250 days for 10 Sailors sampled. Some of the 63 sampled Sailors fell into multiple categories. According to MILPERSMAN 1306-101, a Sailor's skills must be appropriate for the billet, or training en-route will be accomplished when possible. Sailors on sea duty who then attend a school prior to shore duty will have consecutive shore duty assignments because the schools are coded as shore duty. We found that the length of time for schools varied depending on the course or courses taken and can vary by the rating. Additionally, we found that sampled Sailors selected for recruiting duty and brig guard duty received training for these assignments prior to being received by the activity for recruiting or brig guard duty. Shore duty assignments may require an NEC the Sailor may not have, which may be obtained prior to arrival to the shore duty assignment.

According to Fleet personnel, there is a limited number of shore duty billets for many of the sea-intensive ratings we reviewed. The shore billets that are available within these ratings are often limited mostly to instructor duty assignments. The training we identified, based on the statistical samples reviewed, was for training within their rating, and in many cases, was the result of the Sailor being assigned to duty outside of their rating before they reported to their shore duty assignment. We found that Sailors who were assigned to recruiting duty were required to attend a recruiting school while on shore duty. Also, Sailors who were assigned to brig guard duty were also required to attend school during their shore duty tour. In all but one case, the projected rotation date was set for 36 months after the Sailor reported to their prospective commands after training. Therefore their shore duty was extended beyond the minimum 36 months of shore duty. As a result, training could be added to the length of shore duty tours for establishing planned 36-month rotation dates.

Training Before Sea Duty. Of the 192 statistically sampled Sailors assigned to back-to-back shore Unit Identification Codes, 49 Sailors attended training/school before their next sea duty tour. By statistically projecting these results, we estimated that 4,066 Sailors, or 36 percent, attended school before sea duty out of the 11,303 instances of consecutive shore duty assignments. We also determined that out of the 49 Sailors sampled, 23 Sailors could have been assigned to training early, avoiding 1,338 additional shore tour (training) days, but were not. In addition, we determined that shore duty could not be curtailed for 19 Sailors because they did not have a 3-year shore duty tour prior to the school. However, shore duty was curtailed 693 days for 15 Sailors reviewed. The following chart provides our analysis for each of the enlisted ratings reviewed:

Table 9 – Analysis of the Enlisted Ratings Reviewed

	Enlisted Ratings Reviewed							
	OS	STG	GS	GM	QM	ABH	ABF	Totals
Number of Sampled Items	48	37	28	26	22	13	18	192
Member Attended School Prior to Shore Duty	11	16	7	8	10	8	3	63
Number of Days of School/Training Prior to Shore Duty	159	573	154	317	368	305	53	1,929
Number of Days of Shore Duty Curtailed by Detailers/Command (Limited to the Days of School)	40	0	49	80	28	13	40	250
Number of Days Shore Duty Could Have Been Curtailed for Training	119	573	105	237	340	292	13	1,679
Number of Samples Where Member's Shore Duty was Curtailed	2	0	2	2	2	1	1	10
Number of Samples Where Shore Duty Could Have Been Curtailed (or Additional Shore Duty Could Have Been Curtailed if Partially Curtailed)	6	11	4	5	9	6	1	42
Samples Could Not be Curtailed	3	5	1	2	0	1	1	13
Number of Samples That Were Partially Curtailed	0	0	0	1	1	0	0	2
Member Attended School Prior to Sea Duty	12	8	9	10	6	1	3	49
Number of Days of School/Training Prior to Sea Duty	290	1,694	1,209	534	280	57	124	4,188
Number of Shore Duty Days Curtailed by Detailer/Command Limited to The Number of School Days	150	89	353	25	0	35	41	693
Number of Days Shore Duty Would Have Been Avoided if Member's Shore Duty was Curtailed Up to 3 Months (90 days) for Training Prior to Sea Duty (if Not Curtailed)	140	451	129	332	181	22	83	1,338

Number of Samples Where Member's Shore Duty was Curtailed	3	5	4	1	0	1	1	15
Number of Samples Where Shore Duty or Additional Shore Duty (for Samples Partially Curtailed) Could Have Been Curtailed	4	6	2	5	3	1	2	23
Samples Could Not be Curtailed	6	2	4	4	3	0	0	19
Number of Samples That Were Partially Curtailed	1	5	1	0	0	1	0	8
Member Had Training before Shore Duty and Before Sea Duty	0	2	0	2	3	1	0	8

As a result, training could be added to the length of shore duty tours (when training was classified as shore duty) for establishing planned 36-month rotation dates.

Why This Occurred

We interviewed senior managers at all of the commands we visited. At each of these commands, they discussed training as if it was not a part of shore duty or sea duty, but a different category of duty. We reviewed MILPERSMAN 1306-102 and determined that there were five types of duty designations, or “types,” used to identify commands for establishment of sea/shore rotation:

- Shore Duty (Sea/Shore Type Duty Code “1”);
- Sea Duty (Sea/Shore Type Duty Code “2”);
- Overseas Remote Land-based Sea Duty (Sea/Shore Type Duty Code “3”);
- Overseas Sea Duty (Sea/Shore Type Duty Code “4”); and
- Overseas Shore Duty (Sea/Shore Type Duty Code “6”).

Each of these types of duty is credited as sea or shore duty for rotation purposes. According to Navy policy, none of the duty designations are categorized as training based on what the senior managers discussed with the audit team.

Also, according to MILPERSMAN, Article 1306-104, Section 6, detailers may issue orders directing a transfer up to 3 months prior to Projected Rotation Date and up to 4 months after Projected Rotation Date is established. However, based on our review, we found that this was not always occurring. We were told that although the guidance states that a detailer may direct a transfer early, there was no requirement to do so. According

to personnel from Navy Personnel Command, monitoring and/or eliminating Fleet gapped billets remains a priority of DCNO (N1). As a result, a change to MILPERSMAN 1306-104 has been initiated that gives detailers increased authority to pull Sailors up to 6 months early from their shore duty tours in order to better meet the Fleet requirement with an on-time, fully trained relief.

Length of Training

In our opinion, if detailers would routinely make it a “best practice” to send Sailors to training required for their next sea duty assignment when a rating (occupational specialty) in a rate (pay grade) is gapped at sea, Fleet readiness would improve by reducing gapped billets at sea and correcting sea/shore imbalances in some ratings. Also, if detailers would calculate a Sailor’s projected rotation date from the start of training for shore duty, they would reduce gaps at sea, and the Sailors would have only 36 months of shore duty.

Recommendations and Corrective Actions

Our recommendations, summarized management responses, and our comments on the responses are as follows. The complete text of the management response is in the Appendix.

We recommend that the Navy Personnel Command:

Recommendation 9. Require detailers to adhere to Naval Military Personnel Manual Article 1306-104 which will increase their authority to pull enlisted Sailors up to 6 months early from their shore duty tours to better meet Fleet requirements.

Management response to Recommendation 9. Concur, action complete. Minimizing and/or eliminating fleet gapped billets remains a priority of Manpower, Personnel, Training and Education. To this end, the Deputy Chief of Naval Operations (N1) promulgated the Military Personnel Manual (MILPERSMAN) 1306-104, which gives detailers increased authority to pull Sailors up to 6 months early from their shore duty tours in order to better meet the Fleet requirement with an on-time, fully trained relief.

Detailers are required to use provisions in MILPERSMAN 1306-104 to transfer Sailors early, as practical, in order to provide qualified reliefs for transferring sea duty personnel and minimize gapped billets. In addition, MILPERSMAN 1306-104 allows detailers to extend Sailors on sea duty up to 6 months to facilitate an on-time, fully trained relief.

Naval Audit Service comments on management response to

Recommendation 9. Actions completed by management met the intent of the recommendation. The recommendation is considered closed as of the date of management's response, 6 May 2014.

Finding 5: Enlisted Sailors Assigned to Consecutive Shore Duty Assignments

Synopsis

Approximately 99.7 percent of Sailors who received apparent consecutive shore assignments in selected ratings were properly detailed to the back-to-back shore assignments in accordance with the Naval Military Personnel Manual (MILPERSMAN). Only 3 of 192 statistically sampled enlisted Sailors' consecutive shore assignments reviewed could not be explained or justified, which we projected to be only 0.3 percent of 11,303 Sailors with consecutive shore assignments. The appropriate management of back-to-back shore assignments occurred because detailers followed MILPERSMAN when assigning Sailors upon completion of shore duty. As a result, back-to-back shore assignments do not appear to contribute appreciably to critical gapped sea billets.

Discussion of Details

Background

According to MILPERSMAN 1306-101, "Enlisted Assignment System," the normal rotation pattern, also referred to as sea/shore flow, throughout a career is a repetition of assignments at sea and shore. The rotation goal is 3 years of shore duty between sea duty rotations. Detailers may issue orders directing transfer up to 3 months prior to projected rotation dates and up to 4 months after projected rotation dates are established. This 7-month rotation date detailing window provides flexibility for an individual to negotiate orders, and the detailer to accommodate duty preferences while meeting en-route training requirements. It also provides a larger pool of Sailors to match to requirements and improves Fleet readiness.

This sea/shore flow pattern can be modified in individual cases due to variables such as assignment to duty overseas (either at sea or ashore) or for an entire rating with a billet orientation that is primarily within the continental United States and those outside the continental United States.

Pertinent Guidance

Naval Personnel 15560D, "Naval Military Personnel Manual," dated 22 August 2002, is issued under Navy Regulations, 1990, Article 0105, for direction and guidance. It contains policy, rules, and practices for administration of military personnel within the Navy. According to MILPERSMAN, Article 1306-104, "Projected Rotation Date," detailers may issue orders directing transfer up to 3 months prior to the projected rotation

date and up to 4 months after the established projected rotation date. Additional MILPERSMAN articles related to enlisted detailing are explained in detail at Exhibit D.

Audit Results

Approximately 99.7 percent of Sailors who received apparent consecutive shore assignments in selected ratings were properly detailed to the back-to-back shore assignments in accordance with MILPERSMAN. Only 3 of 192 statistically sampled enlisted Sailors' consecutive shore assignments reviewed could not be explained or justified, which we projected to be only 0.3 percent, of 11,303 Sailors with consecutive shore assignments. Although 11,303 consecutive shore duty assignments occurred for the selected ratings and fiscal years selected, we estimate that about 99.7 percent could be explained.

To determine if the assignment of Sailors to consecutive shore duty assignments contributed to gapped billets, we statistically selected 192 Sailors who were assigned to consecutive shore duty assignments. We determined that 3 of the Sailors reviewed were assigned to consecutive shore duty in excess of 3 years and 4 months, which could not be explained. In accordance with Navy policy guidelines, detailers may issue orders directing transfer up to 3 months prior to projected rotation dates and up to 4 months after the projected rotation date is established. As a result, detailer assignments do not appear to contribute appreciably to critical gapped sea billets.

Analysis of Consecutive Shore Duty

Sailors receiving back-to-back shore assignments. We identified 11,303 E-5 (Petty Officer, 2nd Class) and above enlisted Sailors in the Navy for FYs ending 2009, 2010, 2011, and as of 19 September 2012 who appeared to be assigned consecutively to two shore duty activities in the following ratings:

- Aviation Boatswain's Mate (AB);
- Aviation Boatswain's Mate – Fuels (ABF);
- Aviation Boatswain's Mate – Aircraft Handling (ABH);
- Gas Turbine Systems Technician (GS);
- Gas Turbine Systems Technician – Electrical (GSE);
- Gas Turbine Systems Technician – Mechanical (GSM);
- Quartermaster (QM);
- Sonar Technician – Surface (STG);

- Operations Specialist (OS); and
- Gunner's Mate (GM).

We used a two-strata sample for our statistical sample. Of the 11,303 Sailors identified above, 1,439 Sailors assigned to consecutive shore duty activities had Unit Identification Codes in the Navy Enlisted System that matched an activity's Unit Identification Code in the Navy Manpower Analysis Center listing. These activities did not include most of the training commands and appeared to represent potential back-to-back shore assignments. We statistically selected 127 of the 1,439 Sailors for detailed test work to evaluate the propriety of the consecutive shore assignments. This sample of 127 was for the first strata of the sample.

When an activity was not included in the Navy Manpower Analysis Center listing, we reviewed each activity and determined whether the Sailor's assignment was sea or shore duty. As a result, we identified 9,864 of the 11,303 were Sailors assigned to consecutive shore duty activities in the Navy Enlisted System who did not have a match for an activity's Unit Identification Code in the Navy Manpower Analysis Center listing. The majority of the assignments in this grouping were for training assignments. The remaining assignments consisted of decommissioned ships, disestablished shore commands, and unit identification code changes. We statistically selected 65 of the 9,864 Sailors for detailed test work to evaluate the propriety of the consecutive shore assignments. These 65 samples represented the second strata of the sample.

Consecutive Shore Duty Statistical Sample Results. Of the 192 statistical samples reviewed, we found there was a valid explanation for the consecutive shore duty assignments for 189, or about 98 percent, of them.²¹ For the remaining three samples, two represented assignments where the detailer could not explain why the Sailor was assigned to consecutive shore duty. The other was a Sailor that was separated from the Navy and the consecutive shore duty could not be explained based on the archived data that existed. Based on the sample results, we estimate that 34 out of 11,303 instances, or 0.3 percent, of consecutive shore duty assignments could not be explained. We are 95 percent confident that the actual number of unexplained back-to-back shore assignments is between 11 and 646 out of 11,303 Sailor with consecutive shore assignments.

Reasons for Consecutive Shore Duty Assignments. As stated earlier, of the 192 Sailor assignments we statistically sampled, we found there was a valid explanation for the consecutive shore duty assignments for 189 of them. The explanations for those 189 assignments are shown in Table 10.

²¹ Since the samples were not pulled proportionally from each stratum, the percentages within the sample differ from the universe projections.

Table 10- Consecutive Shore Duty Assignments with Valid Explanations

Reasons For Consecutive Shore Duty Assignments	Estimated Projection Based on Statistical Sample Results	Percent of Universe (11,303)
School Before Shore Duty	3,944	34.9
School Before Sea Duty	4,066	36.0
Received by a Transient Personnel Unit While In Route To or From Shore Duty	3,667	32.4
Assigned to an Activity and Then Shifted/Transferred to Another Activity in the Same Location Same Overall Command	859	7.6
Limited Duty	671	5.9
Pregnant	686	6.1
Received by a Ship Pre-commissioning Unit	405	3.6
Projected Rotation Date Was Adjusted at Sailor's Request	535	4.7
Spouse Co-Location	242	2.1
Not Have Enough Active Duty Time Remaining Prior to Separation For Sea Duty	360	3.2
Assigned to the Littoral Combat Ship Program (Training Pipeline)	79	0.7
Assigned to the Landing Craft, Air Cushion Program (Training Pipeline)	68	0.6
Received by a Military Sealift Command Support Unit in Transit To or From a Military Sealift Command Ship	68	0.6
Recruit Training and Then the "A" School for the Rating	467	4.1
Received by an Activity That Had been Considered Sea Duty but is Now Shore Duty	45	0.4
Assigned to a Humanitarian Tour	34	0.3
Identified as Having Human Immunodeficiency Virus	163	1.4
No Sea Duty Billets Available (Both Sailors Were Master Chiefs)	23	0.2
Attended School for Another Rating to Convert Out of the Sampled Rating	152	1.3
Extended an Overseas Shore Tour	152	1.3
Attended a Non-Rating School Prior to the Rating "A" School	152	1.3
Was a Navy Equal Opportunity Advisor – Served as Advisor For Two Overseas Shore Activities	11	0.1
Approved For Consecutive Overseas Tour	11	0.1

Samples may have one or more of the above causes/reasons for consecutive shore duty or the extension of shore duty.

Consecutive Shore Duty Assignments in Excess of 3 Years and 4 Months

In addition to the appropriate justification for 189 sampled Sailors, only 69, or 37 percent, of samples were on consecutive shore duty assignments that exceeded the maximum 3 years and 4 months. The remaining 120 sampled Sailors' total time ashore in their consecutive shore assignments, did not exceed the maximum 3 years and 4 months. However, we found that all of the 69 samples had valid reasons for the consecutive shore duty assignments. The primary reasons for these assignments were:

- 25 samples, projected to be 1,266 or 11.2 percent (1,266/11,303), of Sailors attended schools before shore duty;

- 19 samples, projected to be 1,502 or 13.3 percent (1,502/11,303), of Sailors attended schools after shore duty and before sea duty; and
- 15 samples, projected to be 732 or 6.5 percent (732/11,303), of Sailors were assigned to a Transient Personnel Unit while en-route to or from shore duty.

The Transient Personnel Unit assignments are temporary assignments and were not considered to be the actual shore duty tour. For example, pregnant Sailors and Sailors on limited duty, go to a Transient Personnel Unit for further assignments. Also, some Sailors may go to a transient unit while waiting for a ship to come into port. The transient personnel unit is not going to be the actual duty tour but a stop en-route to the next duty tour. However, the transient personnel unit is coded as shore duty.

Overall Conclusion

Based upon the results discussed above, we concluded that Sailors completing a shore duty tour were not improperly assigned consecutive shore duty assignments and, per Navy policy, detailers did not inappropriately assign consecutive shore duty tours in excess of 3 years and 4 months. Therefore, appropriate back-to-back assignments are required; however, as discussed in Finding 4, the Navy needs to incorporate training into the 36-month shore duty calculation in order to help reduce gapped billets at sea.

Recommendations and Corrective Actions

There are no recommendations for this finding.

Section B:

Status of Recommendations

Recommendations							
Finding ²²	Rec. No.	Page No.	Subject	Status ²³	Action Command	Target or Actual Completion Date	Interim Target Completion Date ²⁴
1	1	22	Work together to study the possibility of establishing a standardized personnel augmentation procedure within Fleet Concentration Areas that could be exercised to support material readiness and training efforts for undermanned ships while in port.	O	Deputy Chief of Naval Operations (N1), Commander U.S. Fleet Forces , Commander Pacific Fleet, Commander Naval Surface Forces, and Navy Personnel Command	3/31/2015	
2	2	37	Revise and improve the Spread Enlisted Programmed Authorizations model to adjust for high attrition years and low attrition years.	O	Office of the Chief of Naval Operations (N13) and the Bureau of Naval Personnel	5/30/2014	
2	3	37	Evaluate the use of a simulation model. For more informed decisionmaking, consider adding additional variables such as current manning, monetary retention incentives, and economic conditions.	O	Office of the Chief of Naval Operations (N13) and the Bureau of Naval Personnel	10/3/2016	3/31/2015
2	4	38	Revise the re-enlistment algorithm to place a higher priority on Navy Enlisted Classifications by either: a. Categorizing by Navy Enlisted Classifications and then evaluating performance; or b. Establishing a minimum performance level, ranking by Navy Enlisted Classifications, and then ranking by performance when determining which Sailors will be retained or separated.	O	Office of the Chief of Naval Operations (N13)	10/3/2016	3/31/2015

²² / + = Indicates repeat finding.

²³ / O = Recommendation is open with agreed-to corrective actions; C = Recommendation is closed with all action completed; U = Recommendation is undecided with resolution efforts in progress.

²⁴ If applicable.

Recommendations							
Finding ²²	Rec. No.	Page No.	Subject	Status ²³	Action Command	Target or Actual Completion Date	Interim Target Completion Date ²⁴
2	5	40	Provide additional training to their Community Managers to ensure that they are aware of how the Spread Enlisted Programmed Authorizations model should be used and are using it appropriately to make effective manning decisions.	C	Bureau of Naval Personnel	5/6/2014	
3	6	55	Create a fit model rather than a fill model and analyze the sea shore flow policy constraints to create an optimal balance between sea and shore duty that will ensure the sea shore flow results in fit to billet requirements at sea.	C	Office of the Chief of Naval Operations (N1)	5/6/2014	
3	7	55	Take action to determine the feasibility of developing or procuring a modeling and simulation model that will simulate real-world processes. The simulation should be able to reduce inaccurate assumptions that are currently being factored into the sea/shore flow model. The model should also consider multiple first tour lengths for sea-intensive ratings.	O	Office of the Chief of Naval Operations (N1)	11/30/2018	11/28/2014
3	8	56	Provide additional management and oversight of the sea/shore flow model. At a minimum, this should include the development of written data input tests, requirements for documenting the tests, procedures to ensure that those who test the model are separate from those who update the model, and the establishment of a contingency plan for operating the model if the current operator is unavailable.	O	Office of the Chief of Naval Operations(N1)	7/31/2014	
4	9	65	Require detailers to adhere to Naval Military Personnel Manual Article 1306-104 which will increase their authority to pull enlisted Sailors up to 6 months early from their shore duty tours to better meet Fleet requirements.	C	Navy Personnel Command	5/6/2014	
5	N/A	71	There are no recommendations for this finding.		N/A		

Exhibit A:

Background

One of the Navy Manpower Analysis Center's missions is to write manpower requirements for Navy afloat commands (ships). The Navy Manpower Analysis Center collects Fleet workload data, updates and writes Staffing Standards, translates workload/mission statements into Ship/Fleet Manpower Documents, and studies manpower impacts of policy decisions. Requirements for the Ship/Fleet Manpower Documents are developed on the Navy Manpower Requirements System.

Ship/Fleet Manpower Documents display approved quantitative and qualitative manpower requirements for an individual ship or class of ships and the rationale for determination of the requirements. Requirements are predicated on Required Operational Capability (ROC)/Projected Operational Environment (POE) statements, ship configuration, specified operating profile, computed workload, and established doctrinal constraints such as standard work weeks and leave policy. The Navy Manpower Analysis Center writes manpower requirements to the minimum skill needed to perform a task, at the minimum pay grade, with the minimum quantity of people to accomplish 100 percent of the ROC/POE wartime requirement. Navy Manpower Analysis Center also maintains sea/shore flow codes for afloat and shore activities.

Enlisted Rating Detailer

The major role of the Enlisted Rating Detailer is the placement of enlisted personnel within the Navy. Sailors, in all enlisted ratings, who are E-5 and above, are eligible to be assigned as Detailers. Enlisted Rating Detailer's responsibilities include:

- Communication with constituents by Career Management System-Interactive Detailing, by telephone, e-mail, and Naval messages;
- Discussion of assignment options, transfer regulations, and career assignment services; and
- Coordination with Navy Personnel Command, Enlisted Personnel Readiness and Support Branch, and Fleet units to ensure proper manning levels.

Enlisted Detailers are charged with the equitable distribution of Sailors to commands based on authorized billets and the Navy Manning Plan via the Career Management System-Interactive Detailing. Detailers' primary considerations for selection of orders, are based on the needs of the Navy, career needs of the individual, and desires of the individual.

Navy Enlisted System

The Navy Enlisted System is the Navy's authoritative database for all active duty Navy enlisted personnel. The system generates and maintains the official automated personnel records of all United States Navy/United States Naval Reserve active duty enlisted personnel. The system is primarily used to calculate enlisted strength, to authorize the establishment of a pay record at the Defense Finance and Accounting Center, and to prepare Enlisted Distribution Verification Reports for distribution to field activities.

Additionally, the enlisted distribution and promotion processes are dependent on the quality of Navy Enlisted System data, as are numerous managerial and Congressional groups overseeing aggregated information about the active enlisted population.

Enlisted Assignment Information System

The Enlisted Assignment Information System is used by detailers in conjunction with Career Management System-Interactive Detailing to post Sailors to billets. The Enlisted Assignment Information System contains data for individual Sailors such as the onboard career history identifying current and prior activity assignments, sea/shore flow code for each activity, and dates the Sailors were received by and transferred from an activity. The Enlisted Assignment Information System also contains detailer notes relevant to assignments for individual Sailors, as well as personal data such as the date of birth, present rating, estimated active obligated service date, and projected rotation date.

U.S. Fleet Forces Command (USFFC), as one of two Manning Control Authorities, is responsible for the continuous management of authorized priority manning that is necessary to ensure mission accomplishment, and provides the order of importance for which activities will be priority manned. All activities are assigned to one of two Manning Control Authorities - Fleet and Bureau:

- Manning Control Authority Fleet – responsible for all sea duty activities and shore activities that are in direct support of the Fleet. Approximately 83 percent of all enlisted billets are managed by USFFC; and
- Manning Control Authority Bureau – responsible for all other shore activities and manage remaining 17 percent of enlisted billets.

USFFC, headquartered in Norfolk, VA, is tasked to develop Fleet manpower, personnel, and individual training and education policies, requirements, processes, programs, and alignments affecting active, reserve, and civilian personnel in support of operational readiness. USFFC controls the Type Commanders and owns their assets.

Manning Control Authority

Navy Personnel Command (PERS-4013) executes decisions made by Manning Control Authority Fleet (USFCC) regarding the Navy Manning Plan. Navy Personnel Command (PERS-4013) acts as an agent of Manning Control Authority Fleet. Navy Personnel Command (PERS-4013) sets the Career Management System - Interactive Detailing based on business rules, Fleet balance, requisition priority, and Manning Control Authority directions. Career Management System - Interactive Detailing is the Web-based system that allows Sailors to view available jobs and make their own applications. In Career Management System - Interactive Detailing, Sailors pick assignments where they want to go and not necessarily where they are needed operationally.

USFCC controls billets to be advertised in the Career Management System - Interactive Detailing. Manning Control Authority prioritized requisitions are filled each monthly cycle. USFCC issues guidance to Type Commanders to make manning actions to fill any unfilled requisitions. The manning actions taken by Type Commanders includes cross-decks, diverts, and Temporary Additional Duty.

Deputy Chief of Naval Operations, (Manpower, Personnel, Training, and Education) (MPT&E) (N1)) has the overall responsibility to plan, program, manage, and execute Fleet manpower requirements.

Fleet Measures of Fit and Fill

There are two measures of manning on a ship: fill and fit. Fill is a measure of the number of personnel onboard in rating versus the number of billets authorized in a rating. Fit is a measure of personnel onboard in a rating and rank versus the number of billets authorized in a rating and rank.

Office of the Chief of Naval Operations Report on Manpower Modeling

The current situation of modeling Navy manpower requirements is explained in the background section of the report entitled “Integrated Manpower Agent-Based Computer Tool-Active Component,” written by a working group in January 2013.

According to the report, “the Navy comprises many different communities which are made up of groups of enlisted ratings and officer designations (e.g., Naval Special Warfare, Aviation). The Bureau of Naval Personnel Military Community Management (BUPERS-3) is responsible for managing these individual communities, ensuring a sufficient supply of personnel for each level of seniority with appropriate experience, in order to meet the Navy’s short- and long-term requirements.

“Community Managers balance the needs of today’s Navy while ensuring that the Navy of the future has the appropriate personnel for decades to come. Doing this requires an understanding of how personnel decisions (accessions, promotions, compensation, etc.) interact over time to produce future inventory levels. For this reason, Community Managers need decision support tools that provide these projections, to allow them informed decisionmaking.

“BUPERS-3 Community Managers, in part through BUPERS-34 analysts, monitor, predict, and develop the Navy’s annual retention rates and retention goals as part of establishing the upcoming fiscal year retention objectives, as well as ensure enlisted community health to support fleet readiness and force structure requirements. In response, a variety of ad hoc forecast methods and tools have been developed to anticipate re-enlistment rates for the target fiscal year but are limited in that they are not capable of modeling potential force-shaping actions to modify behavior.

“Measuring Navy manpower and personnel forecasting accuracy is challenging. Current BUPERS-3 manpower models and/or tools are limited in scope, scalability, and usability (i.e., user friendly, intuitive, and responsiveness), with forecasting practices typically constrained to short-term ad hoc predictions due to the reliability of available tools and methods. Aggregation of forecasts serves as the All Navy baseline that is used to determine the need for “levers” to be implemented at different stages of the [fiscal year] and meet the desired end state of the force structure. These levers, are the force management actions (e.g. selected re-enlisted bonus, approving or disapproving waivers, Perform-to-Serve quotas) that continuously drive retention and community health efforts toward the respective [fiscal year] manpower (e.g., rating, designator, All Navy) goals by continually evaluating the influence of levers and making adjustments in meeting targeted monthly and annual goals. In May 2009, Rear Admiral (RADM) Daniel P. Holloway, Manpower, Personnel, Training & Education Policy Division (N13) stated, “We review each rating weekly with the Community Managers and take a monthly look at how we are looking with re-enlistments before making adjustments. We’re carefully watching all re-enlistment and retention behavior - we don’t want to get caught flat footed.” (Faram, 2010).

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“The importance of driving manpower toward the desired (i.e., planned) end state is significant both financially and as a factor of readiness (i.e., right person, right time, and right place). In [Fiscal Year] FY 2008, the Navy overshot the re-enlistment goals for enlisted Zones A-C by only 1 percent, or approximately 310 Sailors (Ferguson, 2008). This re-enlistment overage included all Sailors eligible to re-enlist, with 1 to 14 years of service, and, although small, was costly.

“The severity of undershooting re-enlistment goals has a large impact on the state of readiness and ability to meet mission objectives. Furthermore, under-estimating goals impose costs that are extremely difficult to measure because the remedy may result in a

combination of solutions, such as increased compensations (i.e., overcompensating Sailors to stay or return), [and] low morale (i.e., increased operations tempo).

“The financial and/or readiness cost to the Navy for missing manpower goals and objectives is significant. There is enormous value of having analysis tools to perform “what if” analysis by simulating long- and short-term strategic plans and constraints against current and future personnel targets, mandated or hypothetical, while aggregating across all communities. Without such tools, Community Managers will continue to react to constant, unplanned variations in personnel stay-or-leave behavior, resulting in the need for continued policy changes and expense to mitigate the potentially large personnel changes and continuous inventory changes required to keep officer and enlisted communities healthy and end strength within tolerance of congressional mandates.”

Description of the Audited Rates

The following paragraphs provide a description of each rating reviewed by the audit as well as the type of training each rating received.

Aviation Boatswain’s Mate. Sailors with Aviation Boatswain’s Mate-Fuels (ABF) and Aviation Boatswain’s Mate-Aircraft Handling (ABH) ratings play a major role in launching and recovering Naval aircraft from land or ships. This includes fueling/defueling of aircraft ashore and afloat and aircraft handling. Their specific duties are: operating, maintaining, and performing organizational maintenance on aviation fueling and lubricating oil systems; maintaining fuel quality surveillance and control in aviation fuel systems; operating and maintaining hydraulic and steam catapults to launch aircraft; and training, directing, and supervising fire-fighting teams.

Gas Turbine Systems Technician. Sailors with the Gas Turbine Systems Technician-Electrical (GSE) rate operate, repair, and perform organizational and intermediate maintenance on electrical components of gas turbine engines, main propulsion machinery, auxiliary equipment, propulsion control systems, and assigned electrical and electronic circuitry up to the printed circuit and alarm warning circuitry. Sailors possessing the Gas Turbine Systems Technician-Mechanical (GSM) rating operate, repair, and perform organizational and intermediate maintenance on mechanical components of gas turbine engines, main propulsion machinery including gears, shafts and controllable pitch propellers; and assigned auxiliary equipment and propulsion control systems.

Quartermaster. Sailors with the Quartermaster rate assist the Officer of the Deck and Navigator in all methods of navigation. They maintain navigational oceanographic charts, navigational instruments, and visual signaling equipment. Following “A” school training, Quartermasters go directly to the Fleet.

Sonar Technician-Surface. Sailors that possess the Sonar Technician-Surface (STG) rate are responsible for operating sonar systems, underwater fire control systems, and supporting equipment on surface ships, such as frigates, destroyers, and cruisers. They are also responsible for undersea surveillance, and aid in safe navigation and search-and-rescue operations. They use equipment to detect, analyze, and locate targets of interest.

Operations Specialist. Sailors with the Operations Specialists (OS) rate operate radar, navigation, and communication equipment in the Combat Information Center aboard ship. The air, surface, and subsurface tactical situations are plotted, observed, evaluated and communicated in the Combat Information Center.

Gunner's Mate. Sailors that possess the Gunner's Mate (GM) rate are responsible for the operation and maintenance of guided missile launching systems, gun mounts, and other ordnance equipment, as well as small arms and magazines. They work with electrical and electronic circuitry and mechanical, hydraulic, and pneumatic systems.

Exhibit B:

Scope and Methodology

Scope

We performed our audit between 17 August 2012 and 7 April 2014. This audit focused on gapped mission critical shipboard billets with emphasis on three sea intensive and three sea centric Naval Surface Forces enlisted ratings. This included a review of 5 years of Fleet gapped billets Navy-wide for Surface Ships (Fiscal Years (FYs) 2008 through 2012). The selected enlisted ratings are as follows:

- Aviation Boatswain's Mate/Aviation Boatswain's Mate-Fuels/Aviation Boatswain's Mate-Aircraft Handling (ABM/ABF/ABH);
- Gas Turbine Systems Technician/Gas Turbine Systems Technician-Electrical/Gas Turbine Systems Technician-Mechanical (GS/GSE/GSM);
- Quartermaster (QM);
- Sonar Technician-Surface (STG);
- Operations Specialist (OS); and
- Gunner's Mate (GM).

The audit included review of procedures, processes, and internal controls that affect gapped billets including manpower requirements, managing manpower, and distributing manpower. We also reviewed Perform-To-Serve, the Navy's primary force shaping tool, and the Enlisted Retention Board, the Navy's one-time measure taken to reduce end strength. However, we were denied full access by the Bureau of Naval Personnel and Chief of Naval Operations personnel to review the original documentation to support how the quotas for Perform-To-Serve and the Enlisted Retention Board were calculated. Perform-To-Serve and Enlisted Retention Board had a significant negative impact on gapped billets. We also performed a review of Navy Specific Administrative Messages implemented in an effort to aggressively address gapped billets at sea. The scope for the stratified statistical sample consisted of active duty Sailors E-5 and above in the selected ratings as of FYs ending 2009, 2010, 2011, and as of 19 September 2012 with consecutive shore duty assignments.

Methodology

We audited the process of developing manpower requirements to distributing manpower to the surface ships to determine how gapped billets occur. The audit team visited the Navy Manpower Analysis Center to interview key personnel on the process of how manpower requirements are determined, what documents are produced from this process, and how the information is entered into the Total Force Manpower Management System (TFMMS). The audit team obtained the Ship Manning Documents that contain the manpower requirements for each class of surface ship and the Activity Manning Documents that included the Billets Authorized for each surface ship.

We audited the process of managing manpower by visiting Office of the Deputy Chief of Naval Operations (CNO) (N10) – Resource Management Division, Office of the Deputy CNO (N12) – Total Force Requirements Division, Office of the Deputy CNO (N13) – Military Personnel Plans and Policy Division, Office of the Deputy CNO (N15) – Training and Education Division, and Deputy Chief of Naval Personnel. We interviewed key personnel at these commands to determine how authorized billets were determined, how Navy personnel were managed to fill these authorized billets, how manpower communities were managed, and what models were used and how the models were used. We obtained and reviewed policies and procedures from CNO and Chief of Naval Personnel. We obtained details on the current initiatives to include recent Navy Administrative Messages (NAVADMINs). We reviewed the results information collected by Office of the Deputy CNO to determine success of initiatives. We obtained copies of the sea/shore flow Model and Spread Enlisted Programmed Authorizations (EPA) Model. We analyzed these models and tested their internal controls.

We audited the process of distributing manpower by visiting the Navy Personnel Command. We interviewed key personnel at this commands to determine how Navy personnel are assigned to billets on ships. We obtained and reviewed policies and procedures from Navy Personnel Command. The Navy Personnel Command was in compliance with applicable policies and procedures for detailing personnel.

We obtained a data base of assignments of Naval Personnel in the ratings within our scope for FYs Ending 2009 thru 2011 and as of 19 September 2012. We developed a sampling universe of Navy personnel E-5 and above who were assigned to two consecutive activities identified as shore duty based on data from TFMMS, and the Navy Enlisted System. A statistical sample was developed and consisted of 192 samples. We interviewed Enlisted Detailers for the selected ratings and obtained supporting documentation to determine why each of these personnel was assigned to two consecutive activities identified as shore duty. The results of the sample were then projected to the universe.

We gathered data from TFMMS and the Navy Enlisted System and tested it against detailers' records to verify the reliability. We found TFMMS and the Navy Enlisted System to be reliable for the purposes of this report.

We audited the process of the Manning Control Authority for surface billets by visiting U.S. Fleet Forces Command (USFFC). We interviewed key personnel at this command to determine how priorities are set for filling billets on ships. We obtained and reviewed policies and procedures from USFFC and found that they were in compliance.

We audited the process of manpower management at the Type Commander-level by visiting Commander, Naval Surface Force, Pacific; Commander, Naval Surface Force, Atlantic; and Commander, Naval Air Force, Pacific. We interviewed key personnel at these commands to determine how they manage manpower on ships and the impact of gapped billets. We analyzed statistics on manning actions such as cross-decking, divers, and temporary additional duty assignments. We obtained and reviewed policies and procedures from these commands. We obtained data from the Fleet Training Management and Planning System for FYs 2008 through 2012, to determine trends in gapped rates within our scope.

We audited the effect of gapped billets by visiting 7 Navy ships: *USS ABRAHAM LINCOLN* (CVN-72), *USS BULKELEY* (DDG-84), *USS BATAAN* (LHD-5), *USS RENTZ* (FFG-46), *USS PRINCETON* (CG-59), *USS WAYNE E MEYER* (DDG-108), and *USS BOXER* (LHD-4). The ship visits were based on classes of ship and were then selected by the type commander based on availability. On each ship we interviewed the commanding officer and the executive officer to determine the impact of gapped billets from the senior management level of the ship. We also interviewed senior enlisted personnel (or representative for the rating) in each of the ratings in our scope to determine the effect of gapped billets on the Sailors in the Navy.

We visited training commands to determine training requirements and course lengths to determine the effects of training on sea/shore flow. We also visited Commander, Naval Submarine Force Atlantic to discuss how they manage their critical billets and how they differ from the surface forces.

We conducted this performance audit in accordance with Generally Accepted Government Auditing Standards, with the exception of the scope impairment related to our review of Perform-to-Serve and Enlisted Retention Board process at CNO and the Bureau of Naval Personnel. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. With the exception of the scope impairment discussed above, we believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

We reviewed Naval Audit Service, Department of Defense Inspector General, and Government Accountability Office audit reports and found there were no reports published in the past 5 years covering Fleet gapped billets; therefore, no followup was required.

Gapped Billets Validation

We interviewed Commander, Naval Surface Force, Atlantic and Commander, Naval Surface Force, Pacific personnel to determine which enlisted ratings and/or Navy Enlisted Classifications (NECs) to review. However, we determined that looking at ratings and NECs was too large of a scope to accomplish the audit; therefore, we reduced the scope of the audit to enlisted ratings only. We then converted the NECs requested by Commander, Naval Surface Force, Atlantic to the ratings associated with the NECs. The resulting list of ratings was selected for our review:

- Gas Turbine Systems Technician (GS, GSE, GSM);
- Quartermaster (QM);
- Aviation Boatswain's Mate (ABM/ABF/ABH);
- Sonar Technician (STG);
- Operations Specialist (OS); and
- Gunner's Mate (GM).

We reviewed 4 years of historical data in the Fleet Training Management and Planning System and the current year using the Community Health Quad Charts on the Navy Personnel Command Web site to determine trends in gapped billets within these ratings.

Community Health Validation

We interviewed Chief of Naval Personnel (BUPERS 3) staff on the process used to determine the number of Sailors that will be needed at each pay grade as Sailors progress over a 30-year career. We interviewed Deputy CNO (N1) personnel to gain an understanding of the Spread EPA model.

We audited the Spread EPA model by tracing the math of each cell in the spread sheet that is the model to the source information. We were able to determine all of the inputs to the model and the assumptions used in the model. We input continuation rates into the model for several historic years while holding the end-strength constant to test the effects of different continuation rates on the model.

Sea/Shore Flow Model Validation

To determine if internal controls were sufficient with the sea/shore flow model, we interviewed CNO personnel and requested data from the sea/shore flow model, which is a Microsoft Excel spreadsheet. From the sea/shore flow model, we analyzed the enlisted ratings that were considered gapped by Commander, Naval Surface Force, Atlantic. These gapped billets enlisted ratings included GS, GSE, GSM; QM; ABF/ABH; STG; OS; and GM. We reviewed Navy Administrative Message 361/12, “Sea/Shore Flow Enlisted Career Paths Updates,” which states that sea and shore tour lengths are to be maximized for Sailors in sea-intensive ratings to create a balance of the sea/shore flow.

We audited the sea/shore flow model by tracing the math of each cell in the spreadsheet to the source information. We were able to determine all of the inputs to the model and the assumptions used in the model.

The inputs are as follows:

- The Continental U.S. (CONUS) and Outside the Continental U.S. (OCONUS) Rotation table. This is a table that identifies which rates are controlled by a CONUS/OCONUS rotation and the rates that are controlled by a Sea/Shore rotation;
- Enlisted Programmed Authorizations Table for FYs 2013 to 2019;
- The Excursion table, which contains manual adjustments to the Spread EPAs such as ships that require manning that are not included in the Spread EPAs, and realignments of the Functional Activity Code – General billets;
- Input that can be controlled by the model user using a Visual Basic sliding bar to determine the number of months in the individual augmentee; sea tours; shore tours; and leave, transit, and training categories;
- The continuation and the gain rates, which are provided by BUPERS; and
- The tax rates, which are limited duty, Geographically Separated Unit/Individual Augmentee, and pregnancy.

We also reviewed the fit metrics for specific gapped ratings within the sea/shore flow model, visited ships and received input from senior level management, and interviewed the single CNO employee that monitors the model in order to determine that the model is considered to be a fill model, rather than fit model.

Training Validation

To determine the impact of training on Sailors' sea and shore duty tours, we interviewed personnel at CNO, Chief of Naval Personnel, Navy Personnel Command, several surface ships, and training commands that report to the Naval Education and Training Command.

We conducted a stratified statistical sample of back-to-back assignments to shore duty by unit identification codes to identify Sailors who attended training before their shore duty tour and Sailors who attended training before their sea duty tour. We interviewed personnel at CNO, Chief of Naval Personnel, Navy Personnel Command, several surface ships, and training commands that report to the Naval Education and Training Command.

Detailing of Enlisted Sailors' Validation

We selected a universe of Sailors who were in specific ratings from the Navy Enlisted System. The selected ratings included in the universe were: ABM/ABF/ABH; GS/GSE/GSM; QM; STG; OS; and GM. Our review of the Navy Enlisted System showed that Sailors in these ratings were assigned to a shore duty activity and then assigned again to another shore duty activity (back-to-back shore duty). The universe of Sailors with consecutive shore duty assignments was limited to enlisted Sailors, E-5 and above, as of FYs ending 2009, 2010, 2011, and as of 19 September 2012. The Navy Enlisted System data did not identify if the activities were considered sea duty or shore duty but did identify the unit identification code for each activity. We obtained a listing of activities identified by unit identification code from the Navy Manpower Analysis Center that identified whether the activity was sea or shore duty. We matched the unit identification codes from the Navy Enlisted System and the Navy Manpower Analysis Center listings to identify the Sailors who were assigned to a shore duty activity and then assigned again to another shore duty activity. If an activity was not included in the Navy Manpower Analysis Center listing, we reviewed the activity and determined whether the Sailor's assignment was sea or shore duty. The universe of 1,439 Sailors for stratum 1 included Sailors assigned to consecutive shore duty activities from the Navy Enlisted System who matched an activity's unit identification code in the Navy Manpower Analysis Center listing. The universe of 9,864 Sailors for stratum 0 included Sailors assigned to consecutive shore duty activities from the Navy Enlisted System that did not match an activity's unit identification code in the Navy Manpower Analysis Center listing. We determined that those activities were shore duty activities. This resulted in a total universe of 11,303 Sailors (1,439 + 9,864) who were assigned consecutively to two shore duty activities. The statistical sample was drawn from the universe of 11,303 Sailors and consisted of stratum 1 with 127 samples and stratum 0 with 65 samples for a combined statistical sample of 192.

For each statistical sample we reviewed, data was provided from the Enlisted Assignment Information System. According to the Rating Detailers, archived Enlisted Assignment

Information System data for 34 selected samples could not be provided because the Sailors separated from the Navy and the detailer could not access the member's data in the system. The archived data was subsequently provided by Navy Personnel Command staff. Navy Military Personnel Manual criteria, states the normal rotation pattern, also referred to as sea/shore flow, throughout a career is a repetition of assignments at sea and shore. The type of duty to which a Sailor will be reassigned is dependent upon completion of the sea or shore tour. The rotation goal is 3 years of shore duty between sea duty rotations. Detailers may issue orders directing transfer up to 3 months prior to projected rotation dates and up to 4 months after the projected rotation date. For detailed results of the statistical sample, see Exhibit E, "Statistical Analysis and Results."

Exhibit C:**Activities Visited and/or Contacted**

Activity	Location
Assistant Secretary of the Navy (Manpower and Reserve Affairs)*	Arlington, VA
Office of the Deputy Chief of Naval Operations (N1)*	Arlington, VA
United States Fleet Forces Command*	Norfolk, VA
Commander, United States Pacific Fleet	Pearl Harbor, HI
Commander, Naval Surface Force, United States Atlantic Fleet*	Norfolk, VA
Commander, Naval Surface Force, United States Pacific Fleet*	San Diego, CA
Commander, Naval Air Force, United States Pacific Fleet*	San Diego, CA
Commander, Submarine Force Atlantic*	Norfolk, VA
Deputy Chief of Naval Personnel*	Millington, TN
Navy Personnel Command*	Millington, TN
Navy Manpower Analysis Center*	Millington, TN
Naval Education and Training Command	Norfolk, VA
Center For Surface Combat Systems, Detachment East*	Norfolk, VA
Center For Surface Combat Systems, Unit Dam Neck*	Virginia Beach, VA
Fleet Anti-Submarine Warfare Training Center*	San Diego, CA
<i>USS ABRAHAM LINCOLN</i> , CVN 72*	Newport News, VA
<i>USS BATAAN</i> , LHD 5*	Norfolk, VA

<i>USS BOXER</i> , LHD 4*	San Diego, CA
<i>USS PRINCETON</i> , CG 59*	San Diego, CA
<i>USS BULKELEY</i> , DDG 84*	Norfolk, VA
<i>USS WAYNE E MEYER</i> , DDG 108*	San Diego, CA
<i>USS RENTZ</i> , FFG 46*	San Diego, CA

*Activities Visited

Exhibit D:

Pertinent Guidance

Secretary of the Navy Instruction 5200.35E “Department of the Navy Managers’ Internal Control Program,” Paragraph 6.i.(1), dated 8 November 2006, requires that Navy activities comply with Government Accountability Office’s (GAO’s) “Standards for Internal Control for the Federal Government” (GAO/AIMD-00-21.3.1), dated November 1999. The GAO internal control standards, “Segregation of Duties” paragraph states that key duties and responsibilities need to be divided or segregated among different people to reduce the risk of error or fraud. This should include separating the responsibilities for authorizing transactions, processing and recording them, reviewing the transactions and handling any related assets. No one individual should control all key aspects of a transaction or event.

Enlisted Assignment System 1306-101, 5 November 2010. Sailor’s skills must be appropriate for the billet, or training en-route will be accomplished when possible.

- Pregnancy Assignments. Sailors who become pregnant while assigned to sea duty will be transferred to shore duty prior to their 20th week of pregnancy. Sailors will be transferred to shore duty for the duration of the pregnancy and 12 months post delivery.
- Limited Duty Assignments. Sailors who become sick or injured while assigned to sea duty will be transferred to a servicing Transient Personnel Unit until an abbreviated Medical Review Board is completed. The Transient Personnel Unit will submit an availability report to Navy Personnel Command (PERS-4013C1), which will make the limited duty assignment.

Time on Station and Retainability/Obligated Service 1306-106, 8 January 2008.

Retainability is the minimum amount of active obligated service a Sailor must have upon arrival at a new duty station after a permanent change of station transfer, both in Continental United States and overseas. Obligated service is required before reassignment to ensure Sailors complete the prescribed tour. Sailors shall not be transferred from their present duty station without obtaining the required obligated service for the prescribed tour. The following requirements (see Table 11) are minimums only. Additional obligated service may be required for special programs or schools.

Table 11 - Obligated Service

Transfer From	Transfer To	Obligated Service
Continental United States Shore or Sea	Continental United States Shore Duty	2 Years
Continental United States Shore	Continental United States Sea Duty	1 Year
Anywhere	Overseas Sea or Shore Duty	Department of Defense Area Tour
Overseas	Continental United States Sea or Shore Duty	1 Year

NAVADMIN 361/12, “Sea/Shore Flow Enlisted Career Paths Updates,” dated December 2012, provides a comprehensive tour length update for most enlisted communities. It reflects the increasingly sea-centric nature of Naval service by having Sailors spend more than half of their career on sea duty. It was also developed to create a balance of the sea/shore flow that will result in: improved Fleet readiness; higher Fleet manning levels; increased geographic stability; enhanced rating experience levels; greater advancement opportunities; and reduced distributable inventory friction. It identifies the maximum sea and shore tour lengths for Sailors in sea-intensive ratings. It states that the sea tour lengths for sea-intensive communities will not involuntarily exceed 60 months for Sailors with less than 20 years of service, and 48 months for Sailors with more than 20 years of service. It also states that the shore tour lengths between sea tours will be set to 36 months.

Exhibit E:

Statistical Analysis and Results

Since the estimated 34 instances of unexplained consecutive shore duty are approximately zero percent of the 11,303 instances of consecutive shore duty, the detailers are not assigning Sailors to consecutive shore duty tours in excess of 3 years and 4 months and creating gapped billets at sea.

Of the 189 statistical samples where consecutive shore duty could be explained, we determined that consecutive shore duty occurred for the following reasons:

Out of the 11,303 instances of consecutive shore duty assignments, we estimate that 4,066 Sailors attended school before sea duty (49 samples). Sailor's skills must be appropriate for the billet, or training en-route will be accomplished when possible. Sailors on shore duty who then attended a school prior to sea duty were identified as consecutive shore duty because the schools are coded as shore duty. The length of time for schools varies depending on the course or courses taken, and can vary by the rating. Nineteen of the 49 samples exceed 3 years and 4 months of shore duty. We estimate that 1,502 out of the 11,303 instances of consecutive shore duty assignments were related to Sailors going to training prior to a sea duty assignment and exceeded 3 years and 4 months.

Out of the 11,303 instances of consecutive shore duty assignments, we estimate that 3,944 Sailors attended school before shore duty (63 samples). Sailors on sea duty who then attend a school prior to shore duty will have consecutive shore duty as the schools are coded as shore duty. Sampled Sailors selected for recruiting duty and brig guard duty generally received training for these assignments prior to being received by the activity. Shore duty assignments may require a Navy Enlisted Classification the Sailor may not have, which may be obtained prior to arrival for the shore duty assignment. Twenty-five of the 63 samples exceed 3 years and 4 months of shore duty. We estimate that 1,266 out of the 11,303 instances of consecutive shore duty assignments were related to Sailors going to training prior to a shore duty assignment and exceeded 3 years and 4 months.

Out of the 11,303 instances of consecutive shore duty assignments, we estimate that 3,667 Sailors were received by a Transient Personnel Unit while en-route to or from shore duty (51 samples). Sailors may be received at a Transient Personnel Unit temporarily after removal from a ship due to limited duty or pregnancy and be awaiting orders from a detailer due to the change in their condition. A Sailor may also be received at a Transient Personnel Unit while in transit to duty at another command, such as a Sailor who separates from shore duty but may be waiting for the ship that is their next

tour of duty to arrive in port so that the Sailor can be received by the ship. Fifteen of the 51 samples exceed 3 years and 4 months of shore duty. We estimate that 732 out of the 11,303 instances of consecutive shore duty assignments were related to Sailors who were received by a Transient Personnel Unit en-route to an assignment and who exceeded 3 years and 4 months of shore duty.

Out of the 11,303 instances of consecutive shore duty assignments, we estimate that 859 Sailors were assigned to an activity and then shifted/transferred to another activity in the same location and same overall command (51 samples). The Sailors shifted from one activity to another activity in the same location and same overall command, or were at the same activity twice. Eleven of the 51 samples exceed 3 years and 4 months of shore duty. We estimate that 125 out of the 11,303 instances of consecutive shore duty assignments were related to Sailors that were shifted to another activity and who exceeded 3 years and 4 months of shore duty.

Out of the 11,303 instances of consecutive shore duty assignments, we estimate that 671 Sailors were on limited duty (22 samples). Sailors who become sick or injured while assigned to sea duty are transferred to a servicing Transient Personnel Unit until an abbreviated Medical Review Board is completed. Sailors who are sick/injured (on limited duty) cannot be assigned to sea duty. Sailors who leave the ship go to a Transient Personnel Unit (coded as shore duty) and then to a shore command for shore duty (until they have recovered or separated) were identified as having consecutive shore duty. Ten of the 22 samples exceed 3 years and 4 months. We estimate that 113 out of the 11,303 instances of consecutive shore duty assignments were related to Sailors assigned to limited duty and who exceeded 3 years and 4 months of shore duty.

Out of the 11,303 instances of consecutive shore duty assignments, we estimate that 686 Sailors were pregnant (11 samples). Sailors who become pregnant while assigned to sea duty are transferred to shore duty prior to their 20th week of pregnancy. Sailors will be transferred to shore duty for the duration of the pregnancy and 12 months post-delivery. Shore duty for these Sailors may involve a short period of temporary duty at a Transient Personnel Unit until a pregnancy tour assignment can be made by the detailers. This was identified as consecutive shore duty. Seven of the 11 samples exceed 3 years and 4 months of shore duty. We estimate that 220 out of the 11,303 instances of consecutive shore duty assignments were related to Sailors who were pregnant and who exceeded 3 years and 4 months of shore duty.

Out of the 11,303 instances of consecutive shore duty assignments, we estimate that 535 Sailors' projected rotation dates were adjusted at the Sailor's request (this contributed to shore duty in excess of 3 years and 4 months) (10 samples). Detailers may issue orders directing transfer up to 3 months prior to projected rotation date and up to 4 months after the projected rotation date is established. This 7-month projected rotation date detailing window provides flexibility for an individual to negotiate orders, and the

detailer to accommodate duty preferences while meeting en-route-training requirements. Sailors can and do request projected rotation date extensions, which may be partially or fully granted depending on the situation.

Out of the 11,303 instances of consecutive shore duty assignments, we estimate that 467 Sailors attended recruit training and then the “A” school for their rating (four samples). This is considered a routine practice as Sailors who join the Navy will go to recruit training and generally an “A” school prior to their first duty assignment.

Out of the 11,303 instances of consecutive shore duty assignments, we estimate that 405 Sailors were received by a ship pre-commissioning unit (11 samples). The Sailor’s tour involves shore duty and then leads to sea duty once the ship is placed in service. Sailors who have completed their prescribed sea tour will only be considered for assignment to ships under construction if they indicate their volunteer status in writing, or in response to a request submitted to Navy Personnel Command (PERS-402D), and have approval granted to extend at sea for the additional time required to meet the required obligated service. Personnel assigned to ships under construction/conversion will be required to incur sufficient obligated service to complete a minimum of 24 months onboard after ship’s placement “In Service” or minimum Department of Defense Area Tour for those units assigned overseas. Sailors assigned to a ship pre-commissioning unit would be coming from shore duty (unless Sailors who have completed a prescribed sea tour volunteer). Six of the 11 samples exceed 3 years and 4 months of shore duty. We estimate that 208 out of the 11,303 instances of consecutive shore duty assignments were related to Sailors who were received by ship pre-commissioning units and who exceeded 3 years and 4 months of shore duty.

Out of the 11,303 instances of consecutive shore duty assignments, we estimate that 360 Sailors did not have enough active duty time for sea duty remaining prior to separation from the Navy (this contributed to shore duty in excess of 3 years and 4 months) (7 samples). Retainability/Obligated Service Requirements for Reassignment/Retainability is the minimum amount of active obligated service a Sailor must have upon arrival at a new duty station after a permanent change of station transfer, both in the Continental United States and overseas. Obligated service is required before reassignment to ensure Sailors complete the prescribed tour.

Out of the 11,303 instances of consecutive shore duty assignments, we estimate that 242 Sailors requested spouse co-location (9 samples). Every reasonable effort is made for military couples to move together/serve together whenever possible. Military couples desiring co-location must separately submit a request to their detailers with command endorsement, noting their military couple status and including the name, rank/rate, and service of spouse; and number of current dependents. Whenever possible, one Sailor will be on sea duty while the spouse is on shore duty and their projected rotation dates will be matched to facilitate future co-location requests. Since sea duty tours are often more than

36 months, which is generally the shore duty tour, Sailors may have to be extended on shore duty to match up the projected rotation date of a spouse. If both were on shore duty and requested co-location, this may result in one Sailor going to sea duty while the other continues on with shore duty until the spouse on sea duty returns to shore duty and the spouse on shore duty rotates to sea duty. This would allow for one spouse to remain with any depends in their care. Six of the nine samples exceed 3 years and 4 months. We estimate that 68 out of the 11,303 instances of consecutive shore duty assignments were related to Sailors requesting spouse co-location and who exceeded 3 years and 4 months of shore duty.

Out of the 11,303 instances of consecutive shore duty assignments, we estimate that 163 Sailors have the Human Immunodeficiency Virus (HIV) infection (2 samples). Navy service Sailors infected with HIV are precluded from overseas assignment or assignment to deployable units. A Sailor determined to have HIV cannot be assigned to sea duty (no overseas assignments or deployable units) and will only have shore duty assignments (shore tours may exceed 3 years and 4 months while the Sailor remains enlisted).

Out of the 11,303 instances of consecutive shore duty assignments, we estimate that 152 Sailors attended school for another rating to convert out of the sampled rating (1 sample). The sampled Sailor completed a 3-year shore duty tour (after a sea duty tour) for the sampled rating and then attended school for approximately 7 ½ months to convert out of the rating and into another rating, thereby exceeding the 3 years and 4 months allowed for shore duty.

Out of the 11,303 instances of consecutive shore duty assignments, we estimate that 152 Sailors extended their overseas shore duty tour, which contributed to shore duty in excess of 3 years and 4 months (1 sample). The sampled Sailor was assigned to an activity in Japan and the tour in Japan was extended through the Overseas Tour Extension Incentives Program.

Out of the 11,303 instances of consecutive shore duty assignments, we estimate that 152 Sailors attended a non-rating school (school for another rating) prior to the rating “A” school (one sample). The sampled Sailor changed ratings and became an Operations Specialist and attended Operations Specialist “A” school after attending a school not related to the Operations Specialist rating.

Out of the 11,303 instances of consecutive shore duty assignments, we estimate that 79 Sailors were assigned to the Littoral Combat Ship Program (7 samples). For assignment on a Littoral Combat Ship there is a substantial training pipeline. Watch standers must go through a training pipeline of up to 1 year to qualify and be ready to assume the watch upon reporting for sea duty. Five of the seven samples exceed 3 years and 4 months. We estimate that 57 out of the 11,303 instances of consecutive shore duty

assignments were related to Sailors assigned to the Littoral Combat Ship Program and who exceeded 3 years and 4 months of shore duty.

Out of the 11,303 instances of consecutive shore duty assignments, we estimate that 68 Sailors were assigned to the Landing Craft, Air Cushion Program (6 samples). There is a training pipeline and an investment made in training and qualifying personnel prior to sea duty. One of the six samples exceeds 3 years and 4 months. We estimate that 11 out of the 11,303 instances of consecutive shore duty assignments were related to Sailors assigned to the Landing Craft, Air Cushion Program and who exceeded 3 years and 4 months of shore duty.

Out of the 11,303 instances of consecutive shore duty assignments, we estimate that 68 Sailors were received by the Military Sealift Command support unit in transit to or from a Military Sealift Command ship (6 samples). Sailors assigned to Military Sealift Command ships may report to the Military Sealift Command support unit before reporting to the ship and upon transfer from the Military Sealift Command ship before reporting to a new assignment. This is a brief period and the support unit is a temporary stop while the Sailor is en-route to or from sea duty on a Military Sealift Command ship. One of the six samples exceeds 3 years and 4 months of shore duty. We estimate that 11 out of the 11,303 instances of consecutive shore duty assignments were related to Sailors received by the Military Sealift Command support unit in transit to or from a Military Sealift Command ship and who exceeded 3 years and 4 months of shore duty.

Out of the 11,303 instances of consecutive shore duty assignments, we estimate that 45 Sailors were received by an activity that was considered sea duty (located overseas) but is now shore duty (4 samples). These shore tours exceeded 3 years and 4 months.

Out of the 11,303 instances of consecutive shore duty assignments, we estimate that 34 Sailors were assigned to a humanitarian tour (3 samples). Emergency leave frequently provides sufficient time to alleviate hardships; however, when a Sailor requires more time than leave can provide and has a chance of resolving the hardship within a reasonable time frame, reassignment for humanitarian reasons may be requested. All cases are reviewed by a board consisting of senior officers and chief petty officers and are considered on an individual basis with the final determination based solely on the information/documentation submitted. One of the three samples exceeded 3 years and 4 months of shore duty. We estimate that 11 out of the 11,303 instances of consecutive shore duty assignments were related to Sailors assigned to a humanitarian tour and who exceeded 3 years and 4 months of shore duty.

Out of the 11,303 instances of consecutive shore duty assignments, we estimate that 23 Sailors had no sea duty billet available (2 samples). Both sampled Sailors were Master Chiefs, and their shore tours exceeded 3 years and 4 months.

Out of the 11,303 instances of consecutive shore duty assignments, we estimate that 11 Sailors were received by a shore duty activity for a second Equal Opportunity Advisor shore duty tour (1 sample). Sailors are required to complete two full consecutive (unless the second tour is waived) Equal Opportunity Advisor tours (one sea and one shore). Equal Opportunity Advisor billets have been identified that require a Sailor who has completed one Equal Opportunity Advisor tour. These billets will be filled by a second tour Equal Opportunity Advisor regardless of sea/shore flow requirements, which results in shore tours that exceed 3 years and 4 months.

Out of the 11,303 instances of consecutive shore duty assignments, we estimate that 11 Sailors were approved for Consecutive Overseas Tours (1 sample). Sailors can request consecutive overseas shore tours and Sailors can be involuntarily assigned to Consecutive Overseas Tour. A Consecutive Overseas Tour occurs when a Sailor is moved to a permanent change of station from one overseas duty station to another. Sailors under Consecutive Overseas Tour orders will normally serve the full tour on both the initial and follow-on shore tour(s). Overseas tours are considered shore duty, and the tours exceeded 3 years and 4 months.

To arrive at the results identified in the previous paragraphs, a series of projections based on the results of a stratified unbalanced sample were calculated based on the audit team's testing of the sampled instances of consecutive shore duty. Projections were calculated at the 95-percent confidence level and were weighted to account for the stratified nature of the sample design. A 95-percent confidence interval has a 5 percent risk that it will not contain the target population value of interest. Projections are restricted to the population of enlisted Sailors E-5 and above for the selected ratings identified as having been assigned to consecutive shore duty activities. This universe contained 11,303 instances of Sailors assigned to consecutive shore duty activities. The results of the projections can be found in Tables 12 and 13 below. Table 12 contains the projections for the number of instances of back-to-back shore duty by category as a percentage of the universe. For example, an estimated 34.9 percent of the individuals in the universe would be coded as "Member Attended "A" School Prior to Shore Duty." The 95-percent confidence interval for this projection ranges from 25.4 percent to 45.8 percent. Table 13 contains the count projections for the number of instances of back-to-back shore duty by category. For example, an estimated 3,944 individuals in the universe would be coded as "Member Attended "A" School Prior to Shore Duty." The 95-percent confidence interval for this projection ranges from 2,867 to 5,176 individuals.

Table 12 – Projection Details – Percentage of the Universe

Percent Projections for Back to Back Shore Activities	95% Lower Bound	Point Estimate	95% Upper Bound
Back to Back Shore Duty That Could Not Be Explained	0.1%	0.3%	5.7%
Consecutive Back to Back Shore Duty – Explainable	94.3%	99.7%	99.9%
Combined Shore Duty is Less than or Equal to 3 Years and 4 Months	61.3%	71.7%	80.2%
Member Attended a School prior to Sea Duty	26.3%	36.0%	47.0%
Member Attended a School prior to Shore Duty	25.4%	34.9%	45.8%
Transient Personnel Unit - in Transit	23.2%	32.4%	43.4%
Unit Identification Code Changed but at Same Command or Moved to Sub-Unit within Command	4.5%	7.6%	12.5%
Member Pregnant	2.5%	6.1%	13.9%
Member on Limited Duty	2.7%	5.9%	12.5%
Projected Rotation Date Adjusted	1.8%	4.7%	12.0%
Member Attended Recruit Training and Then “A” School	1.4%	4.1%	11.9%
Ship Pre-Commissioning Assignment	1.2%	3.6%	9.9%
Not Enough Time For Sea Duty Tour	1.0%	3.2%	10.0%
Spouse Co-Location	0.6%	2.1%	7.4%
Member Has Human Immunodeficiency Virus	0.2%	1.4%	8.7%
Member Attended a Non-Rating School Prior to Rating “A” School	0.2%	1.3%	9.5%
Overseas Tour Extension Program	0.2%	1.3%	9.5%
Member Attended School For Another Rating to Convert Out of the Current Rating	0.2%	1.3%	9.5%
Member Assigned To Littoral Combat Ship Program	0.3%	0.7%	6.2%
Member Assigned To Landing Craft, Air Cushion Program	0.3%	0.6%	6.1%
Military Sealift Command Unit Identification Code 40443	0.3%	0.6%	6.1%
Activity was Considered Sea Duty Now Considered Shore Duty	0.2%	0.4%	5.9%
Humanitarian Tour	0.1%	0.3%	5.7%
No Sea Duty Billets Available	0.1%	0.2%	5.6%
Special Program - Equal Opportunity Advisor	0.01%	0.1%	5.5%
Consecutive Overseas Tour – Approved	0.01%	0.1%	5.5%

Table 13 – Projection Details – Number of Instances in the Universe of 11,303 Consecutive Shore Duty Assignments

Count Projections for Back to Back Shore Activities	95% Lower Bound	Point Estimate	95% Upper Bound
Back to Back Shore Duty That Could Not Be Explained	11	34	646
Consecutive Back to Back Shore Duty - Explainable	10657	11269	11292
Combined Shore Duty is Less than or Equal to 3 years and 4 months	6926	8100	9061
Member Attended a School prior to Sea Duty	2968	4066	5311
Member Attended a School prior to Shore Duty	2867	3944	5176
Transient Personnel Unit - in Transit	2617	3667	4902
Unit Identification Code Changed But at Same Command or Moved to Sub-Unit Within Command	511	859	1412
Member Pregnant	286	686	1565
Member on Limited Duty	305	671	1418
Projected Rotation Date Adjusted	201	535	1354
Member Attended Recruit Training and Then "A" School	153	467	1343
Ship Pre-Commissioning Assignment	140	405	1123
Not Enough Time For Sea Duty Tour	110	360	1126
Spouse Co-Location	68	242	832
Member Has Human Immunodeficiency Virus	26	163	978
Member Attended a Non Rating School Prior to Rating "A" School	21	152	1071
Overseas Tour Extension Program	21	152	1071
Member Attended School For Another Rating to Convert Out of Current Rating	21	152	1071
Member Assigned To Littoral Combat Ship Program	38	79	705
Member Assigned To Landing Craft, Air Cushioned Program	31	68	691
Military Sealift Command Unit Identification Code 40443	31	68	691
Activity was Considered Sea Duty Now Considered Shore Duty	17	45	661
Humanitarian Tour	11	34	646
No Sea Duty Billets Available	6	23	632
Special Program - Equal Opportunity Advisor	2	11	623
Consecutive Overseas Tour - Approved	2	11	623

Exhibit F:

Effect of Gapped Billets

To determine the effect of gapped billets on the Fleet, we interviewed key ship personnel on each of the seven ships we visited. We met with commanding officers, executive officers, command master chiefs, and senior enlisted personnel in the selected ratings or a representative for the rating.

Commanding Officers

One Commanding Officer interviewed stated the effect of gapped billets is that his Sailors have to work harder and longer hours, thereby increasing their fatigue. He also noted that with increased fatigue, the potential for increased safety hazards aboard ships is increased. He further indicated that there are not enough bodies to fill the authorized billets and the ship does not have the proper manning unless the authorized billets are filled. Additionally, it was stated that the Navy is increasing operational risk and one of the commanding officers interviewed asked how to predict when there will be a catastrophic event as a result of tired overworked Sailors.

One of the Commanding Officers we interviewed indicated that his primary concern is safety, since the depth of leadership is not there to keep Sailors trained. He stated that during deployments, safety is a major concern as sleep deprivation is an issue with extending working hours for the Sailors. He further noted that the Third World threat is higher than in past years and manning should not be reduced as the threat has not diminished.

The Commanding Officer of another ship stated that gapped billets aboard the ship reduces crew size and makes it nearly impossible to prepare ships for inspections. Therefore, Sailors from other ships supplement the ship in conducting maintenance and preservation tasks. He also noted that reduced crew sizes negatively affect the ships' material condition and could ultimately lead to an increase in ship mishaps.

According to another Commanding Officer interviewed, his ship has more officers than it is supposed to have, but the opposite is true for the enlisted manning where the numbers are lower than the ship should have. He said further that the Navy is accepting an increased risk because of the short manning (gapped billets) in the enlisted ranks.

We were also told by one of the Commanding Officers interviewed that ships should always be manned up for deployment because ships deploy earlier than scheduled and Commanding Officers do not always know when the ship will be needed.

Another Commanding Officer interviewed stated that the lack of manning causes Sailors to burn out, increasing depression and suicidal tendencies.

Executive Officer

The Executive Officer of one ship stated that unfilled billets hurt the readiness of the ship and required remaining crew members to work harder.

Senior Non-Commissioned Officers

We also interviewed senior enlisted personnel from selected ratings on the effects of gapped billets.

Gas Turbine Specialists

Senior Gas Turbine Specialists from the four ships with this rating visited noted the negative impact of gapped billets. According to those personnel, their staffs are overworked, undermanned, work longer hours, and are stressed. It was also noted that the number of billets authorized is not enough and are gapped, which results in the potential for mistakes or mishaps aboard ship.

Quartermasters

Senior Enlisted Personnel from six of the seven ships visited noted problems with gapped quartermaster billets. Specifically, they noted that Sailors with the quartermaster rating are working longer hours, are more stressed, and have lowered team cohesion. They also noted that the under-manning in the rating is potentially having a negative impact on the ability to navigate. Also, they stated that Sailors' loyalty to the organization is diminishing due to: the constant threat of cross-decking, and the Enlisted Retention Board and Perform To Serve actions. According to those personnel, if the ship is down one or two bodies, this can result in more watch standing, in addition to other tasks needing to be performed while off watch. The end result, they noted, was more strain/fatigue on the quartermasters. They also informed us that they borrow Sailors from other departments to fill in for watch duty. Additionally, they stated that getting underway is tough and borrowing Sailors (from other ratings) is a must, especially when pulling into port. Finally, they stated that the impact of gapped billets aboard the ship becomes a safety issue.

Gunner's Mates

Personnel from four of the seven ships visited noted problems with gapped billets within this rating. The overall impact of the gunner's mate gaps has been an increase to their stress level because they do not have enough gunner's mates for the work that needs to be done. They noted that the gaps result in longer hours and more health issues. This includes depression, which can have a negative impact on weapon usage aboard ship.

It was noted that two gunner's mates on one ship visited were being medically treated for depression and are not allowed to handle weapons.

Operations Specialist

Senior Enlisted Personnel from six of the seven ships noted problems with gapped billets within this rating, thereby resulting in Sailors working longer hours. We were told that the gapped billets cut into the sleep time of the Sailors, which could have a negative impact on a 12-hour watch. In addition to standing watch, the Sailors still have training and other jobs they have to do when not on watch. The gaps also resulted in the entire department being overworked, especially when they are short even one body. As a result of longer work hours, Sailors are "burned out" and morale is low.

Sonar Technician - Surface

Senior Enlisted Personnel from three of the five ships visited noted that as a result of gapped billets, additional taxes (duties outside the rating), and normal requirements, they have to work longer hours, resulting in more strain and stress on the crew. Ultimately, this has a negative impact on the Sailors' personal lives, which impacts the Sailors' professional lives as well.

Aviation Boatswains Mate – Fuels and Aircraft Handling

Senior Enlisted Personnel from the three ships we visited with this rating noted that because they were already under-manned, there was a loss of Sailors in the journeyman band that has negatively impacted the air department and created longer work hours for the crew. Additionally, one ship's Aviation Boatswains Mate – Fuels Chief billet has been gapped for 8 months, and this has placed additional burden and longer work hours on leadership. The senior Aviation Boatswains Mates stated they did not have sufficient coverage because of the gapped billet. They also noted that the increased deployment tempo, combined with the impact of gapped billets for the ratings, has resulted in extended work hours, low morale, and sleep deprivation, which, they pointed out, ultimately leads to potential ship and flight deck mishaps.

According to the personnel interviewed, Aviation Boatswains Mate – Fuels and Aircraft Handling billets should be fully staffed for the work they do. Specifically, their work involves using multi-million dollar equipment with the primary mission of launching aircraft. Aviation Boatswains Mates can work up to 16 to 17 hours a day, sometimes with no down time. We were also told leadership should look at sleep deprivation and gapped billets as potential safety issues, in order to prevent accidents. It was also noted that changes from older helicopters to Osprey helicopters require more people to move them. Additionally, we were informed that they are more maintenance intensive, which has resulted in increased workloads, but not increased manning.

The personnel on the three ships with the aviation ratings noted that untrained or undesignated Sailors (Professional Apprentice Career Track Sailors) are provided to help fill gaps in the aviation department. One senior Aviation Boatswain's Mate noted that the Professional Apprentice Career Track Sailors do not really help much because they leave the department and are just a temporary fix. It was stated that once the Sailors get a taste of this type of work and the environment, they do not want to do these jobs.

Personnel on another ship stated the air department consists mostly of Professional Apprentice Career Track Sailors and it is rare to get designated Aviation Boatswain's Mate Fuels/Aircraft Handling Sailors aboard. The problem is that the Navy trains the Professional Apprentice Career Track Sailors and then loses them.

Effects of Cross-Decking and Temporary Additional Duty

All seven ships identified cross-decking or temporary duty as having a negative impact on the ships and on the Sailors. Specifically, it was noted that it leaves the ship the Sailor comes from short-handed, may cause additional work for the losing ship's Sailors, affects morale, and may have a damaging effect on a Sailor's personal life. This may also affect retention.

One commanding officer stated that Sailors are told to go to another ship "just in time" to get the deploying ship out to sea. This leaves the ship the Sailor comes from short-handed. The commanding officer stated that Sailors on temporary duty to another ship are not counted as a vacancy on the donating ship even though the Sailor is not there.

Another commanding officer noted when a Sailor is sent for temporary duty to another ship, the ship loses a body that is still reflected in his manning documentation and cannot be replaced, while the ship gaining his Sailor temporarily does not reflect the Sailor in the manning for the ship and may receive a replacement from the detailers. Further, the Sailor may deploy with the ship and then will need "dwell time" once the deploying ship returns. This may prevent the Sailor from deploying with the donating ship because of the "dwell time." In addition, the Sailor may have had collateral duties (some of which require specialized training associated with them or a certain rank) on the ship that someone else will have to perform. He further stated that this may cause a burden on the ship to train someone else. Some Sailors plan life events around deployments, and when sent to another ship to deploy unexpectedly, this can have a damaging effect on the Sailors' personal life. This is not conducive to retention. In addition, the receiving ship may receive the worst Sailor the losing ship had.

The commanding officer of another ship stated that he has voiced concern for years about the gapped billets issue and noted that the 100 percent benchmark for ships now is less than it was 10 years ago. The commanding officer further stated that now they use "shell games," such as cross-decking and diverts, to man ships before they deploy versus keeping the manning where it needs to be all the time. These tactics make it look like the ship is manned where it needs to be, but to do this, other ships had to have Sailors ripped

from them and sent to deploying ships to meet manning requirements for deployment. The commanding officer stated these tactics are burning folks down. Sailors at sea put in very long work days. Sailors come into port from a ship returning from deployment and after a minimum dwell time can be sent right back out for another 6-month or more deployment as a result of a cross-decking action initiated by the Type Commander.

Senior officers on another ship noted manning ships to meet metrics just prior to deployment is not good. The Sailor has not been trained and assimilated with the new team and ripping Sailors from ships at the last minute is destroying Sailor morale. Pulling needed Sailors for a 3-to-4 week cross-decking is a bitter pill to swallow when heavy maintenance is required. Personnel further said that many Sailors were pulled from a ship to get another ship to up to a 90-percent fit. The impact to the Sailor is negative when their personal lives are interfered with on short notice. As a result, the Navy may lose good Sailors due to separation. Additionally, the way training is accomplished, with cross-decking, diverts, and temporary duty, it is a lot of work on the back of Sailors remaining on the ship. Personnel further commented that manning needs to stay proficient. If they don't have overall manning, it is difficult to cycle Sailors out for training because a steady stream of Sailors is needed.

Lack of First Class Petty Officers

Senior Enlisted

The senior quartermaster on one ship stated the first class petty officer (E-6) billet has been gapped approximately 3½ years and the next most senior quartermaster was a second class petty officer (E-5). This impacts leadership as everything now falls to the senior quartermaster and he has no experienced quartermasters to fall back on. More responsibility falls on the chief petty officer or Navigator. Except for the chief petty officer, there are no quartermasters over 25 years old or not on their first tour in the Navy on the ship. They are all first term (enlistment) Sailors on their first sea duty. The ship has an extra second class petty officer, which suppressed the first class petty officer billet and the ship did not get a first class petty officer. The extra second class petty officer does not have the experience/knowledge of an experienced first class petty officer. Per the senior quartermaster, they are relying on kids with 2 or 3 years in the Navy, which is different from someone who has been to sea before.

The senior operations specialist on another ship stated they had a lot of junior Sailors – too many third class petty officers and below. They have only one of their four first class petty officer billets filled, with no replacements coming aboard. Ninety percent of the division Sailors have 3 years or less in the Navy. It was noted that the experience level is way down and once they get a Sailor trained, that Sailor is transferred from the ship. Although the ship has the correct number of Sailors, they are entry level and this is a technical rating because Sailors gain experience through time. Also, since Sailors can move up quickly to a second class petty officer, it results in the ship not getting a first

class petty officer. The senior operations specialist is told by detailers they have plenty of operations specialists because the detailers can go one up or one down when filling billets and first class petty officer billets get filled with second class petty officers.

A senior operations specialist on another ship was in a similar situation except the ship did not have any of the four operations specialist first class petty officers. It was noted that they are over-manned for second class petty officers and this is suppressing the first class petty officer billets. In fact, even a junior second class petty officer can count as an experienced/seasoned first class petty officer for billeting/detailing. This hurts the experience level of the ship for operations specialists.

The senior sonar technician on another ship noted the ship has the overall number of sonar technician authorized billets filled. However, there is a sonar technician first class petty officer authorized billet that is gapped. The learning curve for a sonar technician is steep. Because of one up/one down detailing, the ship will never get a sonar technician first class petty officer because they have an excess of sonar technician second class petty officers. This creates a huge gap in terms of years, experience, and training between the senior sonar technician (19 years) and the next most senior sonar technician, a second class petty officer (lead petty officer - about 4 years' experience). A sonar technician first class petty officer would help bridge that gap, but with an excess of sonar technician second class petty officers, that will not happen.

Appendix:

Management Response From the Office of the Chief of Naval Operations



DEPARTMENT OF THE NAVY
OFFICE OF THE CHIEF OF NAVAL OPERATIONS
2000 NAVY PENTAGON
WASHINGTON, DC 20350-2000

5200
Ser N1/114052
6 May 14

From: Deputy Chief of Naval Operations (Manpower, Personnel,
Training and Education) (N1)
To: Assistant Auditor General for Financial Management and
Comptroller Audits

Subj: MANAGEMENT RESPONSE TO DRAFT AUDIT REPORT N2012-049,
"FLEET GAPPED CRITICAL BILLETS" DATED 7 APRIL 2014

Ref: (a) NAVAUDSVC memo 7510/N2012-049 of 7 Apr 2014

Encl: (1) Management response on subject draft report

1. Per reference (a), enclosure (1) provides management
response to recommendations 1 through 9 of subject report.

2. My point of contact is [REDACTED] BUPERS-00IG32,
[REDACTED] or via e-mail at [REDACTED]
[REDACTED]

FOIA (b)(6)

FOIA (b)(6)

Copy to:
CHNAVPERS (BUPERS-00IG)

COORDINATION PAGE

<u>Office/Dept</u>	<u>Point of Contact/Title</u>	<u>Phone</u>	<u>Date</u>	
BUPERS-00IG	[REDACTED] CNP IG	(901) 874-3028	24 Apr 2014	FOIA (b)(6)
PERS-4	[REDACTED] ACNPC, Career Management	(901) 874-3537		FOIA (b)(6)
BUPERS-3	[REDACTED] Military Community Manager	(901) 874-3108		FOIA (b)(6)
BUPERS-00BB	[REDACTED] ADCNP	(901) 874-3010	4/25/14	FOIA (b)(6)
BUPERS-00B	[REDACTED] DCNP	(901) 874-3000	4/25/14	FOIA (b)(6)
N12	[REDACTED] Total Force Requirements	(703) 604-5423	5/1/14	FOIA (b)(6)
N13	[REDACTED] MPTE Policy	(703) 604-5809	4/30/14	FOIA (b)(6)
DCNO(N00L)	[REDACTED] Legal Counsel	(703) 604-5804	5/1/14	FOIA (b)(6)
DCNO (N1B)	[REDACTED] ADCNO (N1B)	(703) 604-7126		FOIA (b)(6)
DCNO (N1)	[REDACTED] DCNO (N1)	(901) 874-3000	6 May 14	FOIA (b)(6)

TAB C

**NAVAUDSVC DRAFT AUDIT REPORT N2012-049,
“FLEET GAPPED CRITICAL BILLETS” DATED 7 APRIL 2014**

FINDING 1: GAPPED BILLETS

RECOMMENDATION 1. That Deputy Chief of Naval Operations (DCNO) (N1); Commander U.S. Fleet Forces Command (COMUSFLTFORCOM); Commander, Naval Surface Forces, U.S. Pacific Fleet (COMNAVSURFPAC); and Commander Naval Surface Forces, U.S. Atlantic Fleet (COMNAVSURFLANT), in coordination with Commander, Navy Personnel Command (NPC) work together to study the possibility of establishing a standardized personnel augmentation procedure within Fleet Concentration Areas that could be exercised to support material readiness and training efforts for undermanned ships while in port.

MANAGEMENT RESPONSE: Concur. This recommendation seeks to establish an augmentation group of Sailors, consisting of Sailors assigned to local shore commands. In principle, the concept appears similar to a force protection augmentation plan. The audit labels the augmentation group a Material Readiness and Training Augmentation Unit (MRTAU). Activation of the MRTAU in part or total would be in support of material readiness and training efforts for undermanned ships while in port.

While this concept wouldn't require additional billets authorized to establish a ready source of manpower to support undermanned ships, activation would pull Sailors away from valid work being performed in other commands. In addition, unlike an envisioned short term augmentation of the security force to face a security threat, augmentation of an undermanned ship would likely be of longer duration creating a greater impact on shore side missions including direct support to the ships. It may be possible to create a process to augment ships' force in port watch standing during the normal working day to enable permanent ship's company to focus on maintenance and training.

The ability to establish an augmentation process for Sailors assigned to shore commands to support undermanned ships exists within COMUSFLTFORCOM, Commander, U. S. Pacific Fleet (COMPACFLT) and Commander, Naval Surface Forces (COMNAVSURFOR) authorities similar to the establishment of augmentation personnel for force protection. There are impacts and costs associated with this concept and should the concept appear viable, would need evaluation against a formal process for augmentation.

DCNO (N1) will coordinate with COMUSFLTFORCOM, COMNAVSURFOR, COMNAVSURLANT, COMPACFLT and NPC to establish a working group to study the feasibility of a MRTAU or other procedure to standardize personnel augmentation within Fleet concentration areas. Study results expected to be provided by March 2015.

FINDING 2: COMMUNITY HEALTH

RECOMMENDATION 2. That Manpower Plans and Policy Division (N13) and the Bureau of Naval Personnel (BUPERS) revise and improve the spread enlisted programmed authorizations (EPA) model to adjust for high attrition years and low attrition years.

MANAGEMENT RESPONSE: Concur. Spread EPA was developed in 2006 when enlisted community managers (ECMs) were tasked to establish the reenlistment rates needed to maintain inventory at authorized levels. Analysis revealed that reenlistment rates were tied to inventory continuation rates from one length of service (LOS) cohort to the next. These individual cohort continuation rates could be used to form the basis for both accession plans and reenlistment goals if they were spread across an entire 30 year cycle for that rating. The spread EPA tool developed from this review formed the basis for the process used in today's Enlisted Community Management. It reflects a steady state inventory designed to

give a community a sustainable inventory across LOS cells. The number is calculated based on historical continuation rates, gain profiles, and desired end strength EPA for the given community and represents an optimal inventory at each paygrade and LOS in order to ensure adequate inventory at each level over time.

Improvement to the Spread EPA tool by including additional variables as well as the capability to adjust for high and low attrition is desirable. Modification to the tool to ensure it can respond to the frequent and time sensitive demands of force structure configuration and end strength controls will require modifications. Funding for this effort has not been requested due to the development of the Integrated Manpower Agent-Based Computer Tool – Active Component (IMPACT-AC). This decision support tool is intended to deliver a web-based decision support software application to assist Community Manager (BUPERS-32) and Community Management Metrics and Analytics analysts (BUPERS-34) with the forecasting of future personnel inventories, through the simulation of Sailor career behavior based on accessions, programmed authorizations, and incentives. IMPACT-AC sponsored by The Office of Naval Research is scheduled for demonstration in May 2014, and then a determination to transition or re-platform will be made.

RECOMMENDATION 3. That N13 and BUPERS evaluate the use of a simulation model. For more informed decision making, consider adding additional variables such as current manning, monetary retention incentives, and economic conditions.

MANAGEMENT RESPONSE: Concur. Gaps and limitations experienced in the Fleet exist due to a lack of an overarching model of manpower requirements and personnel processes which can be used to assess impact of personnel and fiscal decisions on manning, to include database capability which comprehends navy-wide requirements and strategies, and existing and rationalized inventories. While community health decisions will be greatly improved with the implementation of IMPACT-AC described in Recommendation 2, no model or automated process exists that accurately captures the current state of manning and then projects forward to describe what levels may be anticipated one year out at the unit level. Accurate unit identification code level projections are fundamental to major personnel management processes such as effective allocation, distribution and measures of force readiness.

Development of a simulation model to fully understand the impact of various management options at the unit level within the broader context of the Navy world of work will bring clarity to risk evaluation and improved resource allocation. The development of a broad context simulation model will also enable us to work backward to verify that established requirements are executable and sustainable. The Manpower and Personnel and Training Decision Support System Capable Manpower Technology Gap for POM-17 to develop a broad context simulation model for Navy Manpower, Personnel, Training and Education (MPT&E) was forwarded by N1 to N84 recommending it for consideration by the Technology Oversight Group (TOG).

This Gap, if approved by the TOG, will be forwarded, in June/July 2014, to the Office of Naval Research for development of Enabling Capabilities (EC). These ECs will be developed over the Fall 2014 in coordination with the Integrated Product Team (IPT) and Stakeholders and then presented to the IPT in December/January timeframe. In January, the IPT will forward its recommended ECs to the TOG and in February/March 2015 the TOG will approve those ECs to be started in FY17. If approved, it will be 3-4 years for the S&T portion and another 2-3 for Transition (this could overlap with the final year of S&T). Anticipated program period of performance would be FY17-21/22.

RECOMMENDATION 4. That N13 revise the reenlistment algorithm to place a higher priority on Navy Enlisted Classifications by either:

- a. Categorizing by Navy Enlisted Classifications (NEC) and then evaluating performance; or

b. Establishing a minimum performance level, ranking by NEC, and then ranking by performance when determining which Sailors will be retained or separated.

MANAGEMENT RESPONSE: Concur. Military Personnel Manual (MILPERSMAN) 1440-060, dated 29 June 2006, provided criteria for how Sailors were competitively ranked for opportunity to continue their active duty service. This process was updated via NAVADMIN 352/10, dated October 2010. The new algorithm was designed using input from critical stakeholders, including but not limited to the Fleet, ECM, and Policy. The revised process was:

- Step 1: Commanding Officers Recommendation for Retention.
- Step 2: Paygrade - Highest pay grade stacks to top.
- Step 3: Frocked - Sailors selected for advancement but not yet advanced.
- Step 4: Evaluations - Average of up to last five Evaluations.
- Step 5: Critical NEC Held - Those with a critical NEC code will be stacked above non-critical/No NEC Sailors.
- Step 6: Number of physical fitness assessment failures in last four years
- Step 7: Proximity to Time remaining to Soft End Active Obligated Service (SEAOS)/Decision Point.
- Step 8: ECM Final Review - ECM review for content and accuracy after the "Rack and Stack" process to ensure that the "Right Sailor" secures a quota.

The algorithm used a step by step process to rank Sailors to determine quota eligibility. Sailors that are "stacked" higher than their peers are given a quota and are allowed to re-enlist.

Perform to serve has been disestablished via NAVADMIN 149/13. This NAVADMIN introduced the Career Navigator (CNAV) program. As part of the CNAV program, the previous reenlistment algorithm was further adjusted to concentrate only on rank, performance evaluations and critical NECs, per NAVADMIN 150/13.

Decision to update the current reenlistment algorithm, incorporating a change to NEC use in the reenlistment decision will require results of two efforts:

1. FY-14 Analysis of NEC use on Force Management.
2. Results of a simulation model which will predict the impact of various management options at the unit level and at the Navy aggregate level.
 - a. FY-14 Analysis - An evaluation of the current reenlistment approval algorithm is planned for FY-14. The effort will concentrate on evaluation of NEC use during enlisted Force Management. The tasks will include: analysis of the reenlistment algorithm format, process mapping/review of NEC use, and impact analysis of NECs on reenlistment decisions. Current funding for this work has been requested, but not yet identified.
 - b. Simulation Model - Development of a simulation model to fully understand the impact of various management options at the unit level and at the Navy aggregate level is required to bring clarity to risk evaluation and improved resource allocation. NEC management will be one of the elements reviewed within the proposed simulation model. The development of this simulation model will also enable us to work backward to verify that established requirements are executable and sustainable.

The Manpower and Personnel and Training Decision Support System Capable Manpower Technology Gap for POM-17 to develop a broad context simulation model for Navy MPT&E was forwarded by N1 to N84 recommending it for consideration by the Technology Oversight Group (TOG).

This Gap, if approved by the TOG, will be forwarded, in June/July, to the Office of Naval Research for development of Enabling Capabilities (EC). These ECs will be developed over the Fall in coordination with the IPT and Stakeholders and then presented to the IPT in December/January timeframe. In January, the IPT will forward its recommended ECs to the TOG and in February/March 2015 the TOG will approve those ECs to be started in FY-17. If approved, it will be 3-4 years for the S&T portion and another 2-3 years for Transition (this could overlap with the final year of S&T). Anticipated program period of performance would be FY-17; FY-21 and FY-22.

RECOMMENDATION 5. That the Bureau of Naval Personnel provide additional training to their community managers to ensure that they are aware of how the Spread Enlisted Programmed Authorizations model should be used and are using it appropriately to make effective manning decisions.

MANAGEMENT RESPONSE: Concur, action complete. ECM have been provided standard operating procedures (SOP) for EPA spreads and are trained prior to the annual EPA re-spread. ECMs are aware of how to use the resulting EPA spread for daily rating management."

FINDING 3: SEA SHORE FLOW MODEL

RECOMMENDATION 6. That DCNO (N1) create a fit model rather than a fill model and analyze the sea shore flow policy constraints to create an optimal balance between sea and shore duty that will ensure the sea shore flow results fit to billet requirements at sea.

MANAGEMENT RESPONSE: Concur, action complete. The Sea Shore Flow Model (SSFM) has been modified to solve for maximum attainable fit. The newly developed optimization subroutine iterates through every possible tour length combination to determine the best fit possible for each rating, given the underlying billet structure and ECM projected continuation rates and gain distributions. However, the fidelity of the SSFM remains limited to rating and month vice rating, paygrade, and month. As such, the fit metric contained in the optimization subroutine uses LOS as a proxy for paygrade seniority (i.e., most junior Sailor in terms of LOS is also most junior Sailor in terms of paygrade). Until the development of a stochastic manning simulation model as described in Recommendation 7 below, the Enlisted Sea Shore Flow Career Path modeling capacity and capabilities within DCNO (N1) remain limited to the Excel based, deterministic SSFM. That said, improvements to the SSFM are made as new manning insights are identified (e.g., inclusion of Inventory Friction as an input parameter); in response to senior leadership guidance (e.g., development of persistence subroutine to maximize stability); in response to major stakeholder inquiries (e.g., impact of setting sea and shore tours outside policy constraints); or to facilitate assessment of various force structure proposal.

RECOMMENDATION 7. That DCNO (N1) take action to determine the feasibility of developing or procuring a modeling and simulation model that will simulate real-world processes. The simulation should be able to reduce inaccurate assumptions that are currently being factored into the sea/shore flow model. The model should also consider multiple first tour lengths for sea-intensive ratings.

MANAGEMENT RESPONSE: Concur, action under review. Given the limited resources available for the development and procurement of modeling capabilities within DCNO (N1), a strategy is being developed to leverage off of one of two modeling efforts currently underway. The IMPACT-AC and New Strength models both will provide a more accurate projection of future inventory of personnel at the rating and paygrade level (i.e., more accurate as compared to the Spread EPA and Current Strength models). Ostensibly both will do the same thing but use slightly different approaches. An accurate

projection of future inventory at the rating and paygrade level is the first step in developing a manning simulation model. The second step is to develop an algorithm to distribute that future inventory of personnel to the future billet demand. POA&M provided below with an estimated completion date of November 2018.

POA&M to Procure/Develop Manning Simulation Model (MSM):

Actions	Date
Complete the assessment of IMPACT-AC and New Strength Module IMPACT-AC demo and then determination if to transition or re-platform (MAY2014) New Strength Model delivered (OCT 2014)	OCT 2014
Determine if a module could be added to one of the models which would have the capability required to meet NAVAUDSVC requirements	NOV 2014
If module option is viable, develop MSM module (2-3 years depending on model chosen, enhancements required and method) Year one dedicated to developing baseline for supporting MSM Years two and three dedicated to algorithm development, statistical analysis, testing, Validation and Verification (V&V), and documentation	NOV 2017
If module option not viable, submit or reallocate funds to procure/develop MSM (3-4 years for submission and development) Year one will complete development of requirements document, RFP, proposal evaluation, award, software certification (if required) Years two through four to complete model development, statistical analysis, testing, Validation and Verification (V&V), and documentation	NOV 2018

RECOMMENDATION 8. That DCNO (N1) provide additional management and oversight of the sea/shore flow model. At a minimum, this should include the development of written data input tests, requirements for documenting the tests, procedures to ensure that those who test the model are separate from those who update the model, and the establishment of a contingency plan for operating the model if the current operator is unavailable.

MANAGEMENT RESPONSE: Concur, action in work. Documentation for updating, maintaining, and testing the Sea Shore Flow Model (SSFM) is under development, expected completion date is July 2014. Second civilian Operations Research Analyst has been hired to provide redundancy and additional oversight. CNA review of SSFM efficacy is underway. CNA review is focusing on determining the time delay between promulgating tour length policy changes (i.e., release of Sea Shore Flow Enlisted Career Path NAVADMIN) and manifestation of expected manning changes in the Fleet. Expected completion date is September 2014. While not a formal verification and validation process, the CNA review will be helpful in determining any weaknesses in the SSFM and refining the process for determining and assigning sea and shore tour lengths.

FINDING 4: TRAINING ASSIGNMENTS FOR ENLISTED SAILORS

RECOMMENDATION 9. That Navy Personnel Command require detailers to adhere to Naval Military Personnel Manual Article 1306-104 which will increase their authority to pull enlisted Sailors up to 6 months early from their shore duty tours to better meet Fleet requirements.

MANAGEMENT RESPONSE: Concur, action complete. Minimizing and/or eliminating fleet gapped billets remains a priority of MPT&E. To this end, DCNO (N1) promulgated MILPERSMAN 1306-104,

which gives detailers increased authority to pull Sailors up to 6 months early from their shore duty tours in order to better meet the fleet requirement with an on-time, fully trained relief.

Detailers are required to use provisions in MILPERSMAN 1306-104 to transfer Sailors early, as practical, in order to provide qualified reliefs for transferring sea duty personnel and minimize gapped billets. In addition, MILPERSMAN 1306-104 allows detailers to extend Sailors on sea duty up to 6 months to facilitate an on-time, fully trained relief.

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Enclosure (1)

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